



PETALUMA MARSH RESTORATION

MODEL WATERSHED
RESTORATION AND HABITAT MANAGEMENT PROGRAM

CALFED PROPOSAL

City of Petaluma

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DMR-WATERSHED

FL-152

**SECTION I
EXECUTIVE SUMMARY**

*"A vision without a task is but a dream,
A task without a vision is drudgery,
A vision and a task is the hope of the world."*

quote from a church in Sussex England
Circa 1730

I. EXECUTIVE SUMMARY

The City of Petaluma is pleased to submit this proposal for the *Petaluma Marsh Restoration Project*. This proposal is one of three separate proposals submitted by the City of Petaluma and a fourth Inquiry Submittal submitted by the local Resource Conservation District, that collectively would comprise a Model Watershed Restoration and Management Program for CALFED. The objective for the Model Restoration and Habitat Management Program is to provide a framework for complete restoration of the Petaluma River Watershed. The focus of this proposal is to restore and enhance the tidal marsh at the upper end of the estuary, linking fragmented habitat areas and extending the range of tidal habitat. The regional location and relationship of this proposal with other restoration efforts in the Petaluma Watershed are illustrated in Figures I-1 through I-4.

The Petaluma River supports the Sacramento splittail and Delta smelt through the tidal reaches as well as, steelhead trout and chinook salmon, connecting to spawning habitat in Lynch Creek, Adobe Creek, and through Willow Brook to Lichau Creek. The Petaluma River also supports the non-native striped bass. The Petaluma Marsh Restoration Project would provide for tidal marsh restoration linking together three sites: (1) the Demonstrations Wetlands Project would restore approximately 150 acres of dike baylands to a mosaic of tidal marsh, seasonal wetlands, transitional pannes and riparian and oak savanna; (2) levees would be breached to enhance tidal circulation in the recently acquired Alman Marsh next to the Petaluma Marina; and, (3) tidal marsh terraces would be created along the banks of McNear Peninsula. The Petaluma River supports an extensive tidal marsh along the lower watershed providing critical nursery habitat and food supplies for young fish, as well as a variety of other marsh species and birds. The proposed project would expand and link these existing resources, extending the range of tidal habitat upstream to connect with previously restored sites near the Petaluma Marina.

The City of Petaluma is seeking matching grant funds from CALFED in the amount of \$350,000 to acquire the selected site for the Demonstration Wetlands Project. The proposed CALFED grant would secure the site for the restoration project before the site is sold to other development interests, by providing the additional funding needed this fiscal year. These grant funds will be matched by the Sonoma County Open Space District (\$525,000) and the City (\$200,000). Additional funding of approximately \$250,000 is also requested for construction of restoration improvements at the Alman Marsh and McNear Peninsula.

The Petaluma Marsh Restoration Project will have a synergistic effect with other local restoration efforts that are underway and proposed for additional funding assistance from CALFED in the upper reaches of the Petaluma River and Adobe Creek as illustrated in Figures I-2 and I-3. If fully funded by CALFED, the three proposals from the City and the fourth Inquiry Submittal from the Resource Conservation District will empower the local agencies to complete all restoration activities within the Petaluma River Watershed, providing an excellent model for other restoration efforts throughout the Bay-Delta system. The Petaluma River Watershed provides an outstanding opportunity to develop a completely restored model watershed for the following reasons:

Vision - The proposals are based upon the community's shared vision for restoration of the Petaluma River Watershed. The City of Petaluma has completed comprehensive plans for the restoration effort through the adoption of the *Petaluma Marsh Enhancement Plan (1992)*, the *Adobe Creek Restoration Plan and Management Program (1995)*; the *Restoration Design and*

Management Guidelines for the Petaluma River Watershed (1995), and the Petaluma River Access and Enhancement Plan (1996). Planning for the upper watershed is underway through a 205j planning grant from the EPA, administered by the local Resource Conservation District.

Synergy - The proposals are comprehensive and well-integrated, providing a framework for complete restoration of the entire Petaluma River Watershed. The proposals are structured to maximize benefits to endangered fish by addressing stressors throughout the habitat range in the lower marsh (food supply and nursery habitat), riparian zones (water quality and aquatic habitat) and upper watershed (attraction flows/erosion control and spawning habitat). The Petaluma River has an intact tidal prism in the lower watershed for rearing habitat and good spawning habitat in the upper watershed, providing a safe haven for endangered fisheries.

Ready to Build - The proposed projects are ready to build, providing for early implementation and "in-the-ground" restoration that directly benefits the targeted species. Environmental review has been completed or is underway for the three proposals. The City has assembled all of the resources needed to implement the Model Restoration and Habitat Management Program with some funding assistance from CALFED.

Highly Leveraged - The proposals are highly leveraged with extensive local participation and funding resources. The City of Petaluma, partner agencies and private contributors have invested over \$11.6 million in restoration activities in the Petaluma River Watershed over the past 10 to 20 years (refer to Table V-1). Over \$11.9 million in local resources are committed as matching funds for the three proposals submitted by the City over the next 3 to 5 years. Total requested CALFED participation in the three proposals is only \$2.9 million over a 3 year period. An additional \$2.0 million endowment for Habitat Management in the upper watershed (submitted as an Inquiry Proposal by the local Resource Conservation District) would empower the local agencies to complete all restoration activities in the Petaluma River Watershed and provide a complete model Restoration and Habitat Management Program that meets CALFED's objectives.

Accessible - The Petaluma River and many tributary streams are accessible to the public for direct observation, research and education through the land use policies of the City. The watershed is small enough to be manageable as a model watershed (32 square miles) and contains the variety of habitats that exemplify the larger Bay-Delta system. The watershed provides excellent examples of the full range of habitats for anadromous fish including tidal marsh, shaded riparian aquatic habitat, and upstream spawning habitats. The issues are simplified, with only one municipal discharge/urban jurisdiction surrounded by predominately rural uses, that provides an ideal control for scientific research and an opportunity for successful inter-jurisdictional coordination.

Sustainable - The proposed projects empower the local community to engage in more sustainable resource management practices that address critical issues of water supply and water quality in the context of ecosystem restoration. The proposals are integral to the City's larger planning efforts in water supply and wastewater management to provide recycled water for urban irrigation, thus reducing the demand on potable water supplies and providing a more sustainable system of water use.

Precedent - The proposals set an excellent precedent of broad based community support for restoration activities, based upon a strong foundation of comprehensive planning and implemented through innovative methods involving both public and private sector investments.

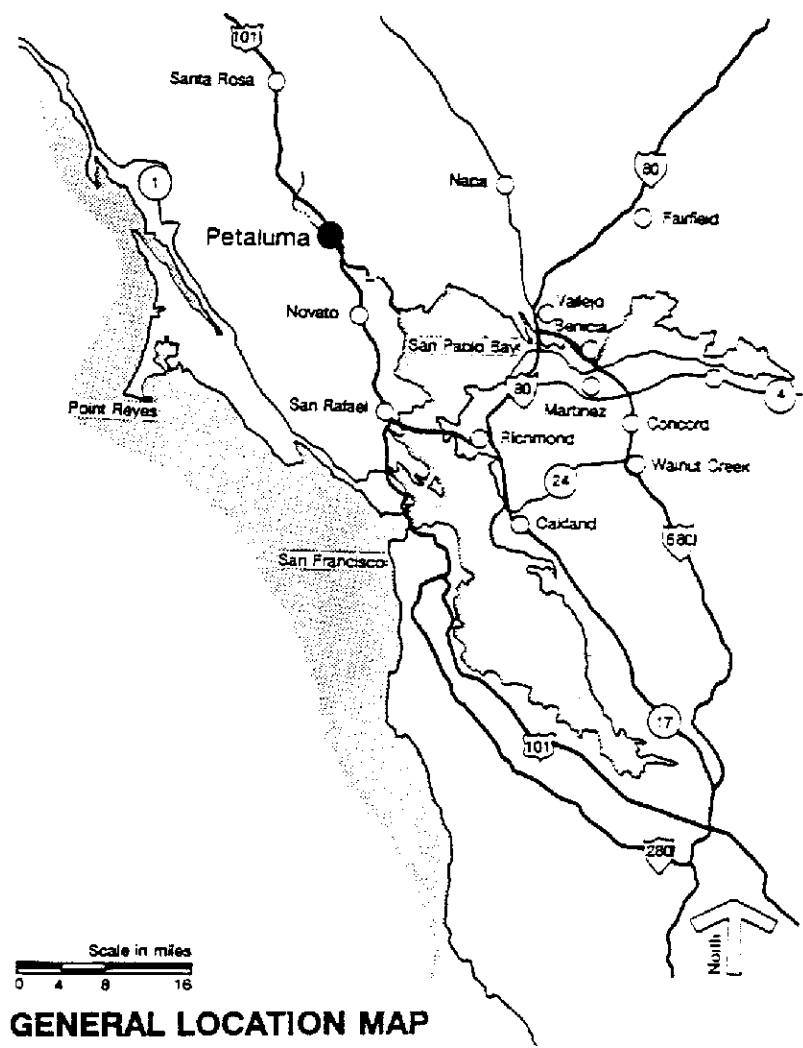


FIGURE I-1

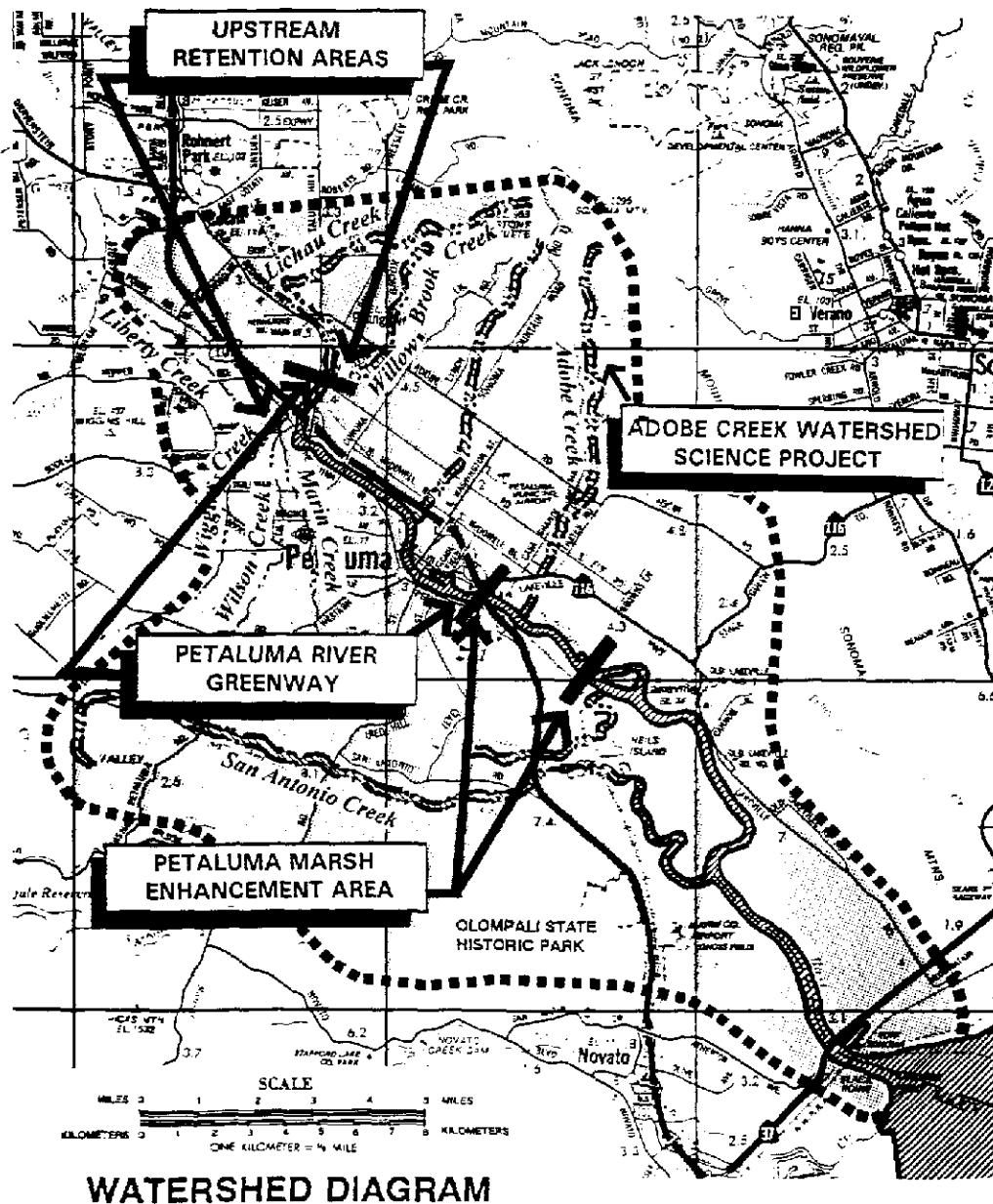


FIGURE I-2

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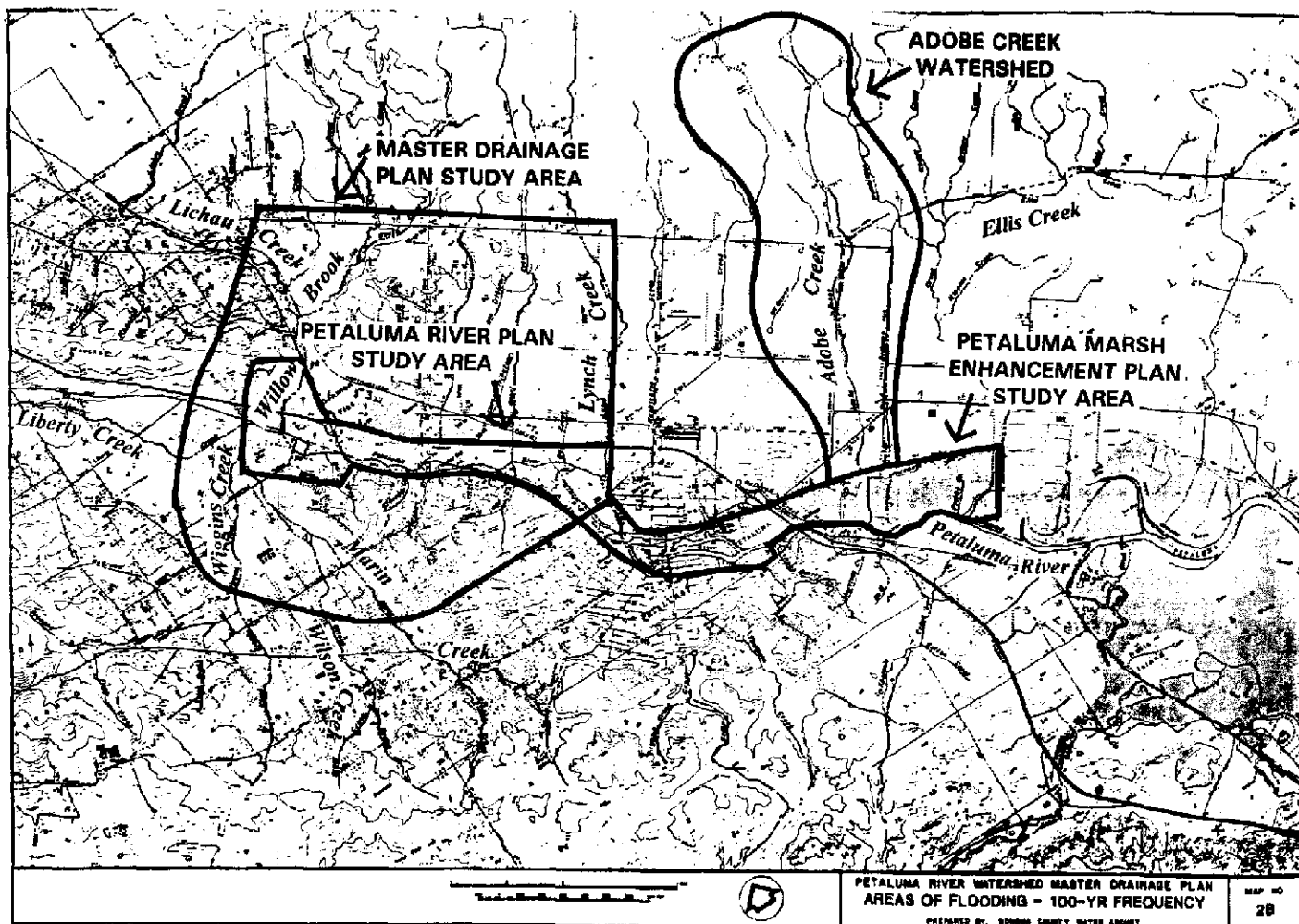
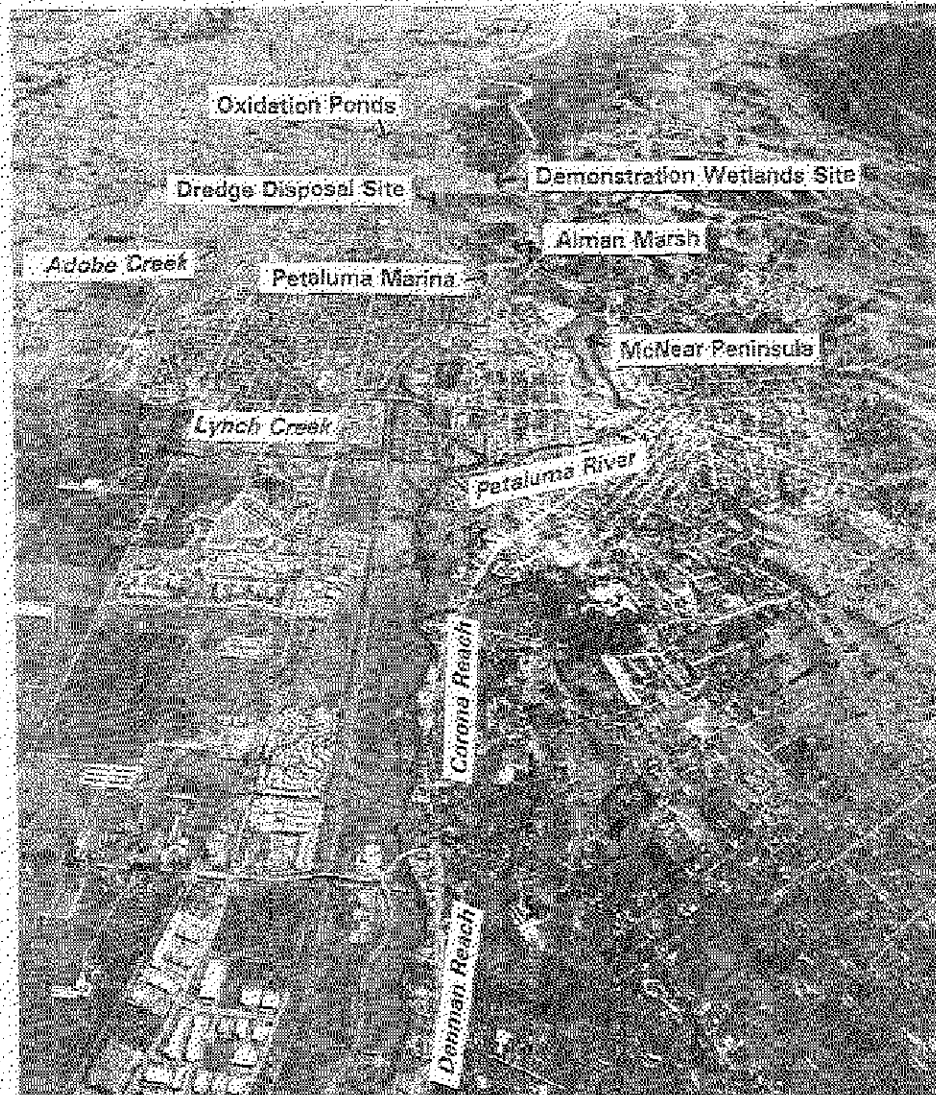


FIGURE I-3

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FIGURE I-4



City of Petaluma, looking southwest toward San Pablo Bay, 1984. The Marsh Plan (1992) envisioned 300 acres of restored tidal marshes at the upper end of the estuary. The River Plan (1996) envisions restoration of a continuous riparian corridor or greenway connecting the tidal marshes through town to the upper watershed areas. Adobe Creek is the pilot project for a comprehensive approach to long-term monitoring and habitat management, incorporating a public education program with research science and utilizing local volunteers to nurture the streams back to a healthy ecosystem.

II. PROJECT SUMMARY/TITLE PAGE

PROJECT TITLE: *Petaluma Marsh Demonstration Wetlands Project*

APPLICANT: City of Petaluma
P.O. Box 61
Petaluma, CA 94953

PROJECT MANAGER: Jennifer Barrett Phone: 707 778-4317
Senior Planner Fax: 707 778-4498

FINANCIAL MANAGER: Paula Corwyn Phone: 707 778-4352
TAX IDENTIFICATION NUMBER: 94-6000392

PARTNERS/COLLABORATORS:

- Sonoma County Agricultural Preservation and Open Space District - Acquisition Funding
- Dept. of Fish and Game - Technical Review and Habitat Management Oversight
- San Francisco Estuary Institute - Data Analysis and Regional Monitoring Program

Interagency consultation, technical assistance and permitting will be provided by:

- Regional Water Quality Control Board - NPDES discharge permit
- U.S. Army Corps of Engineers - lead federal agency for Section 404 permit
- Sonoma-Marin Vector Control Agency - vector control
- Bay Conservation and Development Commission - use permit
- U.S. Fish and Wildlife Service - technical review and assistance

PROJECT TYPE: Acquisition FY97-98; Design Services FY98-99; Construction FY99-00

REQUESTED FUNDING

FY 97-98	FY 98-99	FY 99-00
Site Acquisition	Design Services	Construction
\$350,000	\$7,400	\$241,860

SITE CHARACTERISTICS: 150 acre historic diked bayland, existing tidal marsh adjoining the Petaluma River and upland grassland mid-channel peninsula within the river

SITE LOCATION: North Bay, Sonoma County, Petaluma River Watershed, Petaluma River

PROPOSED PROJECT CHARACTERISTICS: Restoration of 100 acres tidal marsh, creation of 30 acres freshwater ponds and riparian woodlands, 3 acres seasonal wetlands, 2 acres of transitional pannes adjacent to the oxidation ponds; breaching levee and enhancement of 20 acre tidal marsh adjoining Petaluma Marina; restoration of tidal wetland terraces and approximately 5,000 lineal feet of banks along the perimeter of the McNear Peninsula.

SECTION III
PROJECT DESCRIPTION

*"One must be the change
you wish to see in the world."*

Gandhi

III. PROJECT DESCRIPTION

The City of Petaluma is seeking matching grant funds from CALFED in the amount of \$350,00 for site acquisition of 150 acres of historic diked baylands to construct a demonstration wetlands project. This project is intended to demonstrate how beneficial reuse of tertiary treated water can be utilized to restore and enhance wildlife habitat consistent with the historic ecological processes and functional relationship of the river and adjacent floodplains. Additional grant funds in the amount of \$7,400 in FY 98-99 and \$241,860 in FY 99-00 are also requested for design and construction of tidal marsh restoration and enhancement of two recently acquired sites in the vicinity of the demonstration wetlands project. By combining construction of the three restoration sites into one larger project, the City anticipates lower project administration and construction costs and greater direct benefits to endangered species.

The goal of the Demonstration Wetlands Project is to provide a mosaic of wetland habitats by re-establishing the natural tidal hydrology to restore tidal marsh habitat and create other wetland, riparian and terrestrial habitats that complement the restored tidal marsh as described in Table III-1. The historic tidal marsh and existing wetlands in the project area are shown in Figures III-1 and III-2. Figure III-3 illustrates the existing vegetation in the project area. A Conceptual Plan and cross-sectional diagram for the Demonstration Wetlands Project is provided in Figures III-4 and 5. A conceptual plan and cross-section for the Alman property are provided in Figure III-6 and 7. Figures III-8 and 9 provide the conceptual plan & cross-sectional diagram for tidal marsh restoration along the McNear Peninsula.

Adaptive Management Techniques. Opportunities for adaptive management were also identified and recommended for incorporation into the demonstration wetlands project by the Dept. of Fish and Game. Adaptive management techniques include making recycled water available during drought years for streamflow augmentation in Ellis Creek and wetland enhancement within the dredge disposal site. During drought years the recycled water would maintain critical riparian habitat for the red-legged frog in Ellis Creek and provide seasonal wetland habitat for migratory birds at the adjacent dredge disposal site.

Possible Beneficial Reuse of Dredge Spoils. Because the site has been diked for many years, the land has subsided significantly in some areas. These areas may require many years of sediment deposition to aggrade to an elevation that would support vegetation. The City will consider utilizing dredge spoils from the Petaluma River to raise the elevation of the site and hasten the restoration process. Utilizing dredge spoils would also have a secondary benefit of extending the life of the City's existing dredge disposal site. Utilization of dredge spoils to restore the marsh will depend to a great extent on the type and quality of the sediments and the timing of construction. The next dredging cycle is expected to occur in the year 2000, which is also the projected start of construction for the demonstration wetlands. The Sonoma Baylands project utilized dredge spoils to restore tidal marshes near the mouth of the Petaluma River. The successes and failures of the Sonoma Baylands project will provide valuable guidance for the City in determining the appropriateness of using the dredge spoils in the demonstration wetlands.

A. PROJECT APPROACH

Targeted Species - Reference sites in the vicinity of the proposed marsh were used to define the targeted species. The nearby wetland areas adjacent to the selected site include Ellis and Adobe

Creeks, the Petaluma River and the Petaluma River marshes. These areas have been surveyed in previous studies and identified as existing habitat for endangered salt marsh harvest mouse, California red-legged frog, California clapper rail, California black rail, saltmarsh yellow throat and the Sacramento splittail. Other sensitive fish species known to exist in the Petaluma River and nearby streams (Adobe Creek) include Delta smelt, steelhead trout and chinook salmon. The Petaluma River also supports the non-native striped bass. Migratory waterfowl and great blue herons also utilize the Petaluma Marsh. These species are identified as the targeted species for development of the demonstration wetlands to expand the critical habitat for these endangered species and retain existing habitat values. A more extensive list of the benefiting species is provided in Table III-1.

Existing Wildlife Use and Habitat Values - As part of the environmental review process, vegetation and wildlife surveys of the proposed marsh site were conducted by Jones & Stokes Associates. The project site consists primarily of diked historic baylands used for hay production. Only small areas (less than 1 acre) of the site support freshwater marsh and pickleweed marsh habitats. As shown in Figure 2 the site primarily consists of annual grassland, which provide nesting areas and foraging habitat for raptors, migratory shorebirds and waterfowl. The site also provides important refugia habitat during periods of high tide for the endangered salt marsh harvest mouse, as well as other small mammals and rodents. Portions of the site near Ellis Creek may provide important buffer areas and breeding habitat for the western pond turtle and tiger salamander. These habitat values will be preserved and enhanced in the Demonstration Wetlands.

Project Implementation - The City of Petaluma will implement the project utilizing consultant contract services to complete survey and legal description/right-of-way mapping, Phase I assessment, and appraisal (all of which are currently underway). Additional funding is urgently needed to complete the acquisition in FY 97-98, before the property is sold to other development interests. Additional consultant contract services will be utilized for design to prepare bid documents and for construction management services. The City will publicly bid the project and award the construction contract to the lowest responsible bidder. City staff will provide project management, interagency coordination/permitting, technical review and construction oversight, grant administration and financial reporting. The structure of the project team and funding partners is illustrated in Figure III-10.

The demonstration wetlands project proposed for CALFED funding combined with the Phase I Marsh Enhancement Project completed by the City in 1995 provide for nearly complete implementation of the Petaluma Marsh Enhancement Plan. The remaining site recommended for tidal marsh restoration in the Marsh Plan is the dredge disposal site which may be proposed for future funding cycles. The Plan calls for constructing an interior levee and breaching the outside levee to provide a narrow migration corridor for the salt marsh harvest mouse. The Dept. of Fish and Game and the City have an agreement to dedicate 65 acres to wildlife use when the disposal site has reached capacity. The City is evaluating options for beneficial reuse of dredge spoils in conjunction with the demonstration wetlands and biosolids management program to extend the life of the dredge disposal site and provide other opportunities for adaptive management of these resource lands. An opportunity exists at this site to create a long-term self sustaining system of beneficial reuse of tertiary water for habitat enhancement and biosolids management in conjunction with the wastewater facilities project.

B. LOCATION AND/OR GEOGRAPHIC BOUNDARIES OF PROJECT

The project area is located in the North Bay at the upper end of the San Francisco Bay Estuary and tidal marshes that adjoin the Petaluma River as shown in Figure 7. The three sites proposed for restoration provide an opportunity to extend the zone of tidal influence and connect the fragmented marshes situated north of Adobe Creek with the larger tidal marshes situated south of Ellis Creek as shown in Figure 1. The demonstration wetlands site, adjoins the Petaluma River on the south, Ellis Creek on the east, the City's dredge disposal site on the west and Lakeville Highway on the north. The Alman Marsh site adjoins the Petaluma Marina and restored tidal marshes adjacent to the dredge disposal site immediately upstream. McNear Peninsula is located just upstream from the Petaluma Marina. McNear Peninsula provides one of the few opportunities to soften the hard banks and restore tidal marsh habitat in the downtown reach of the Petaluma River. Figures III-11 through III-14 illustrate the existing habitats that would be expanded and enhanced through this proposal.

C. EXPECTED BENEFITS

The benefits of the demonstration wetlands includes increasing the extent of tidal marsh to connect with other recently restored sites situated upstream of Adobe Creek which supports a steelhead and salmon fishery. The Demonstration Wetlands Project provide over 100 acres in restored tidal marsh, 30 acres of freshwater ponds and riparian woodlands, 3 acres in seasonal wetland habitat and 2 acres of "transitional pannes". These wetland types provide high habitat values, particularly for the endangered species and anadromous fish. The conceptual plan incorporates seasonal wetlands, upland grasslands, transitional habitats and oak savanna to retain and enhance the existing habitat values of the site. The project would increase the biodiversity of the area by providing a mosaic of habitat types as described above.

The project would restore the relationship of the floodplain and tidal marshes to the Petaluma River, reducing upstream flooding conditions and providing an appropriate location for sediment deposition. The project would also increase freshwater flows to the San Francisco Bay and reduce the overall pollutant loading from the City's municipal discharge. The former marshland would be restored and permanently protected from potential development. The project area also provides invaluable research, educational and recreational opportunities that will be tied to the City's larger watershed planning efforts. The site is adjacent to the Petaluma River trail and the site plan incorporates extending access to limited areas for public viewing and education.

As called for in the Petaluma Marsh Enhancement Plan, the demonstration wetlands would provide a "migration corridor" for the endangered salt marsh harvest mouse, connecting the fragmented marsh areas located north of Adobe Creek with the larger marsh areas situated south of Ellis Creek. The extension of tidal marsh at the upper edge of the estuary is identified as an important goal to expand the extent of habitat for the endangered tidal marsh species, connect fragmented marsh areas and improve water quality conditions for anadromous fish, particularly the endangered Sacramento splittail, Delta smelt, chinook salmon and steelhead trout.

D. BACKGROUND AND BIOLOGICAL/TECHNICAL JUSTIFICATION

Historic Uses - The site was historically tidal marsh with some seasonal wetland habitat. Historic maps indicate that Ellis Creek did not have a direct channel confluence with the

Petaluma River as it exists today, but rather drained into a broad freshwater tidal area just below Lakeville Highway. Historically, a complex system of tidal sloughs meandered through the site as illustrated by the historic map of the Petaluma River. Sections of the Petaluma River were channelized in the early 1900's and many of the adjacent marshes were diked and drained, as were most of the lands in the San Francisco Bay and Delta. The proposed marsh site has been farmed since the early 1900's and routinely disked, seeded and cut annually for hay crops for at least the past 20 years. More recently, the property has been marketed for possible development.

During the past 30 years, the City of Petaluma acquired the two properties (diked farmlands) located both upstream and downstream of the proposed marsh site for development of the oxidation pond system and to provide a site for disposal of dredge spoils from the Petaluma River. As part of the permitting for these two facilities, the City dedicated 45 acres adjacent to each of these sites for fish and wildlife use and breached the levees to restore the tidal marsh. As part of an agreement with the Dept. of Fish and Game, the City will dedicate an additional 65 acres of the dredge site for wildlife use when the site's disposal capacity is filled. In 1990, the City also entered an agreement with the County of Sonoma to excavate a previously diked area known as Schollenberger Park to create a marina. As part of that agreement, the City provided a replacement site for a public access trail to the Petaluma River along the periphery of the dredge disposal site. These actions provided for approximately 150 acres in tidal marsh restoration which flanks the proposed demonstration wetlands site. The proposed Marsh Restoration would expand upon these efforts by 150 acres, providing approximately 300 acres in restored tidal marsh at the upper end of the estuary.

Petaluma Marsh Enhancement Plan. The vision for the Demonstration Wetlands Project was initiated by the Petaluma Marsh Enhancement Plan that was funded by the Coastal Conservancy and completed in 1992. The Enhancement Plan calls for acquisition of this site and restoration of tidal marsh along the Petaluma River to connect the fragmented marsh areas situated north of Adobe Creek. Since adoption of the Marsh Plan, the City has actively implemented numerous elements including: capping the Casa Grande Landfill Site and enhancing the adjacent tidal marsh by breaching the levees to improve water circulation; creating wetland terraces, release pond and enhancement plantings in the lower reach of Adobe Creek; fencing, trail and parking improvements at the dredge disposal site; acquisition of the Alman Property adjacent to the Marina and landfill site; and the acquisition of McNear Peninsula upstream of the Marina. The Demonstration Wetlands site is the remaining property needed to fully implement the Marsh Plan.

Wastewater Facilities Project and Effluent Management Plan. The City of Petaluma has undertaken development of a new state-of-the-art wastewater treatment facility in order to improve the reliability of the existing system, enhance water quality and provide expanded capacity to serve the projected population. The approved project includes construction and operation of a new 6.7 mgd treatment facility with advanced treatment to meet the discharge requirements and provide high quality water for use in urban irrigation, habitat enhancement and higher value food crops. The City Council authorized a performance-based, competitive proposal process to consider a privately owned, built and operated treatment facility under a long term service agreement and ground lease. Petaluma is the first community in California to consider privatization of the treatment facilities which has attracted national and international attention.

The new facility will meet the federal water quality criteria for shallow water discharges and State Title 22 requirements for unrestricted irrigation as performance standards established by the City. The new facility will include an extended aeration secondary treatment system, as well as coagulation/sedimentation and filtration systems. In addition, the new system will provide nitrification to eliminate the potential for ammonia toxicity and denitrification for nutrient removal to reduce the potential for water quality impacts associated with oxygen levels in the river. The new facility will provide ultra violet (UV) disinfection to avoid the storage and handling of hazardous chemicals (i.e. chlorine). The total cost of the new tertiary treatment facility is estimated at \$35 million to be funded by sewer rates and connection fees.

As part of the City's wastewater facilities project, the City Council approved a site for development of the Demonstration Wetlands Project adjacent to the oxidation ponds and the Petaluma River. The proposed wetland system would restore approximately 150 acres of farmland to a mosaic of freshwater and tidal marshes, consistent with the City's Petaluma Marsh Enhancement Plan. The freshwater wetlands will require a year-round discharge to sustain habitat values and will further reduce the storage and irrigation requirements of the City's effluent management system, as well as provide opportunities for education and recreation. The environmental studies on potential water quality impacts indicated that advanced treatment systems would allow for an increase in the discharge while reducing the overall pollutant loading. The wastewater facilities project will also provide Class B biosolids for implementation of a beneficial reuse management program.

In addition to the Demonstrations Wetlands Project, the City's long-range wastewater management program envisions expanding the City's reclamation program to provide for an estimated 300 acres in urban irrigation, thus reducing the demand on potable water supplies. The City of Petaluma operates one of the largest irrigation reclamation systems in the San Francisco Bay Area, recycling approximately 2,400 acre-feet of water annually on approximately 800 acres.

E. PROPOSED SCOPE OF WORK

The following three projects will be combined into one project for construction cost efficiency if adequate funding is provided through this grant request.

Demonstration Wetlands The City has secured \$525,000 in grant funding from the Sonoma County Agricultural Preservation and Open Space District for site acquisition. The City has budgeted \$200,000 for site acquisition this fiscal year. Additional funding is urgently needed to complete the site acquisition before the property is sold to other development interests. The City is requesting a \$350,000 matching contribution from CALFED to acquire the land and secure the site for implementation of the Demonstration Wetlands Project. Additional grant funding will be sought from the Wildlife Conservation Board and other grant programs for design and construction. The City will complete a rate study and establish sewer rates that will provide the remainder of the funding needed for design and construction as well as, long-term monitoring and management.

Alman Marsh The City is seeking implementation funding for design and construction for enhancement of the Alman Marsh. Planning and environmental review has been completed with funding assistance from the Coastal Conservancy. Site acquisition was funded by the City of Petaluma and the Sonoma County Open Space District. Design and construction funding is

needed to provide for breaching of the levee to improve water circulation, softening of the river bank, installation of biotechnical erosion control measures and marsh plantings (see Figure III-7).

McNear Peninsula The City is seeking implementation funding for construction of the tidal marsh restoration along the perimeter of the McNear Peninsula. The project would lay back the banks along the entire perimeter to create tidal marsh and prevent further erosion. Two large benches or wetland terraces would also be created near the tip of the peninsula as shown in Figures III-8 & III-9. The City has budgeted funding for design in the Parks and Recreation Budget and is requesting funding for construction only in FY 99-00.

F. MONITORING AND DATA EVALUATION

A long-term Monitoring Program and Habitat Management Plan is currently being developed by, Jones & Stokes Associates, the City's consultant team in conjunction with the S. F. Estuary Institute's efforts to establish a Regional Monitoring Program. Additional performance criteria for successful establishment of the restored and created habitats will be established and monitored in accordance with the U.S. Army Corps guidelines for Section 404 permits. The receiving water and effluent water quality will be monitored in accordance with the discharge requirements established by the Regional Water Quality Control Board. Wildlife use of the site will also be monitored and documented. The S.F. Estuary Institute has worked with the consultant team to define a monitoring program that would focus on the toxins of concern to the targeted species and defined pathways of these toxins in the food chain. Sediments will be sampled and analyzed for trace elements and organic priority pollutants. If organic contaminants show increases over time in the sediment, then analysis of persistent organics in the biota will be completed. Species selected for monitoring are expected to be abundant at the site and are representative of species at greatest risk of toxic contamination.

The Management Plan will focus on establishing an appropriate hydrologic regime to meet the habitat goals. Best Management Practices for vegetation and vector control measures will be defined to control weeds and invasive plant species and prevent problems related to mosquitoes, avian botulism and cholera. Adaptive management techniques and labor and training requirements will be also be defined. The Management Plan will include a schedule for water quality monitoring, wildlife and sediment sampling and describe appropriate methods, protocols, and reporting requirements. The City will coordinate interagency review and contract with the S.F. Estuary Institute to compile and analyze the data reports and provide recommendations on management needs. The City envisions the demonstration wetlands will be monitored and managed through a professional services agreement with a qualified team. Long-term funding for the monitoring and management program will be provided from the City's sewer enterprise fund.

G. IMPLEMENTABILITY

The property owner is actively marketing the site to development interests and has expressed a willingness to consider selling the 150-acre portion of the site to the City of Petaluma - if the acquisition can close this fiscal year. The City has completed environmental review for site acquisition. Design studies, mapping surveys, Phase I Assessment, and appraisals are underway to be completed in fall of 1997. If adequate funding for site acquisition is available, the project schedule provides for completion of design in 1998-99 and construction in the year 99-00 along with completion of the new tertiary treatment facility. Funding for construction will be provided from a rate increase in the City's sewer enterprise fund as discussed below.

TABLE III-1

**PROPOSED HABITATS
FOR THE
PETALUMA MARSH RESTORATION PROJECT**

Saline Emergent Wetland (Tidal). Approximately 100 acres of saline emergent tidal marsh will be restored by breaching the levee along the Petaluma River and allowing tidal waters to inundate the site. The marsh is expected to provide suitable habitat for the salt marsh harvest mouse, Sacramento splittail, steelhead trout, fall-run chinook salmon, striped bass, and saltmarsh common yellowthroat. California clapper rail and California black rail may also use the marsh. Additional enhancement of 20 acres of tidal marsh within the Alman Property located adjacent to the Petaluma Marina is proposed by breaching of the levee to improve water circulation, installation of biologs and enhancement planting to prevent bank erosion. Restoration of approximately 5,000 linear feet of tidal marsh benches along the banks of McNear Peninsula are also proposed to provide in-channel habitat upstream of the Marina.

Seasonal Wetland and Transitional Panne. Seasonal wetland and transitional panne habitats will be restored in the upper portion of the site, along an elevational/salinity gradient. The seasonal wetlands (3 acres) will be supported by seasonal rainfall and are expected to provide suitable habitat for such species as the saltmarsh common yellowthroat. The transitional pannes (2 acres) will be supported by extreme high tides and are expected to provide suitable foraging habitat for raptors and shorebirds.

Freshwater Pond/Mixed Riparian Woodland. This habitat will be established by grading to create approximately 30 acres of open water ponds, fringed by mixed riparian woodlands. The ponds will be supported by tertiary-treated wastewater from the City's new wastewater facility. Excess water moving through the ponds will enter the upper portion of the restored saline emergent wetland, where it will mix with tidal waters. The ponds and riparian zone are expected to provide suitable habitat for migratory waterfowl.

Valley Oak Savanna/Annual Grassland. A small area of valley oak savanna habitat would be restored adjacent to Ellis Creek. Annual grassland would be established surrounding the seasonal wetlands and at other locations on the site. These areas are expected to provide suitable habitat for such species as the California clapper rail (foraging) and the salt marsh harvest mouse (escape-cover) as well as provide important upland buffers and potential breeding habitat for the western pond turtle and tiger salamander.

TABLE III - 1
PETALUMA MARSH DEMONSTRATION WETLANDS PROJECT
EXPECTED WILDLIFE HABITAT SUITABILITY

RESTORED TIDAL MARSH

Targeted Special-Status Species		Other Benefiting Species	
*	California black rail	*	Marsh wren
*	California clapper rail	*	Shorebirds
*	Chinook salmon (fall-run)	*	Striped bass
*	Delta smelt	*	Virginia rail
*	Sacramento splittail		
*	Salt marsh common yellowthroat		
*	Salt marsh harvest mouse		
*	Steelhead trout		

FRESHWATER POND/MIXED RIPARIAN WOODLAND

Targeted Special-Status Species		Other Benefiting Species	
*	California red-legged frog	*	Bats
*	Saltmarsh common yellowthroat	*	Belted kingfisher
*	Western pond turtle	*	Bullfrog
		*	Cliff swallow
		*	Diving and puddle ducks
		*	Garter snake
		*	Great blue heron
		*	Great egret
			Marsh wren
			Migratory waterfowl
			Muskrat
			Pacific tree frog
			Raccoon
			Red-winged blackbird
			Song birds
			Western toad

TRANSITIONAL PANNES

Targeted Special-Status Species		Other Benefiting Species	
*	Salt marsh common yellowthroat	*	Killdeer
*	Western snowy plover	*	Marsh wren
		*	Shorebirds

SEASONAL WETLANDS

Targeted Special-Status Species		Other Benefiting Species	
*	Northern harrier	*	Great egret
		*	Killdeer
		*	Raptors

VALLEY OAK SAVANNA

Targeted Special-Status Species		Other Benefiting Species	
*	White-tailed kite	*	Bushtit
		*	Red-shouldered hawk
		*	Scrub jay
		*	Spotted towhee
		*	Woodpecker

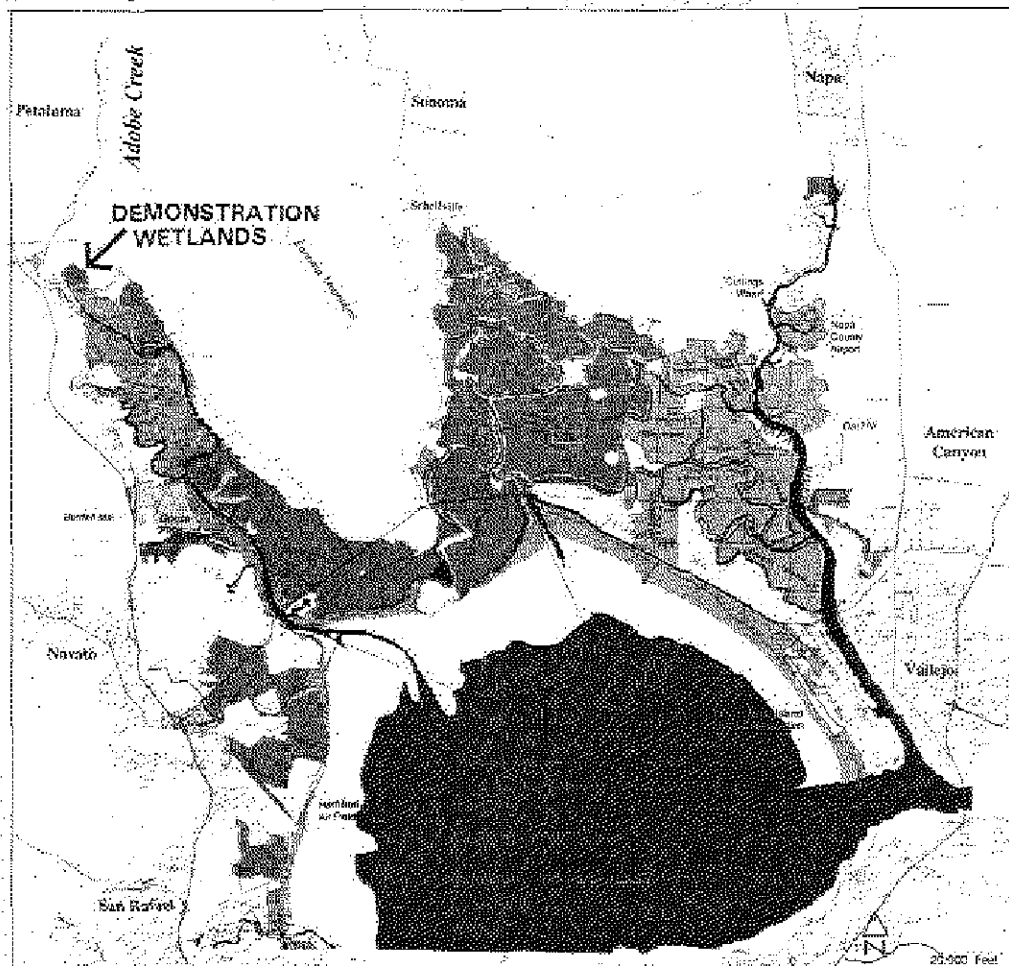
species/b71

FIGURE III-1

Wetlands and Related Habitat

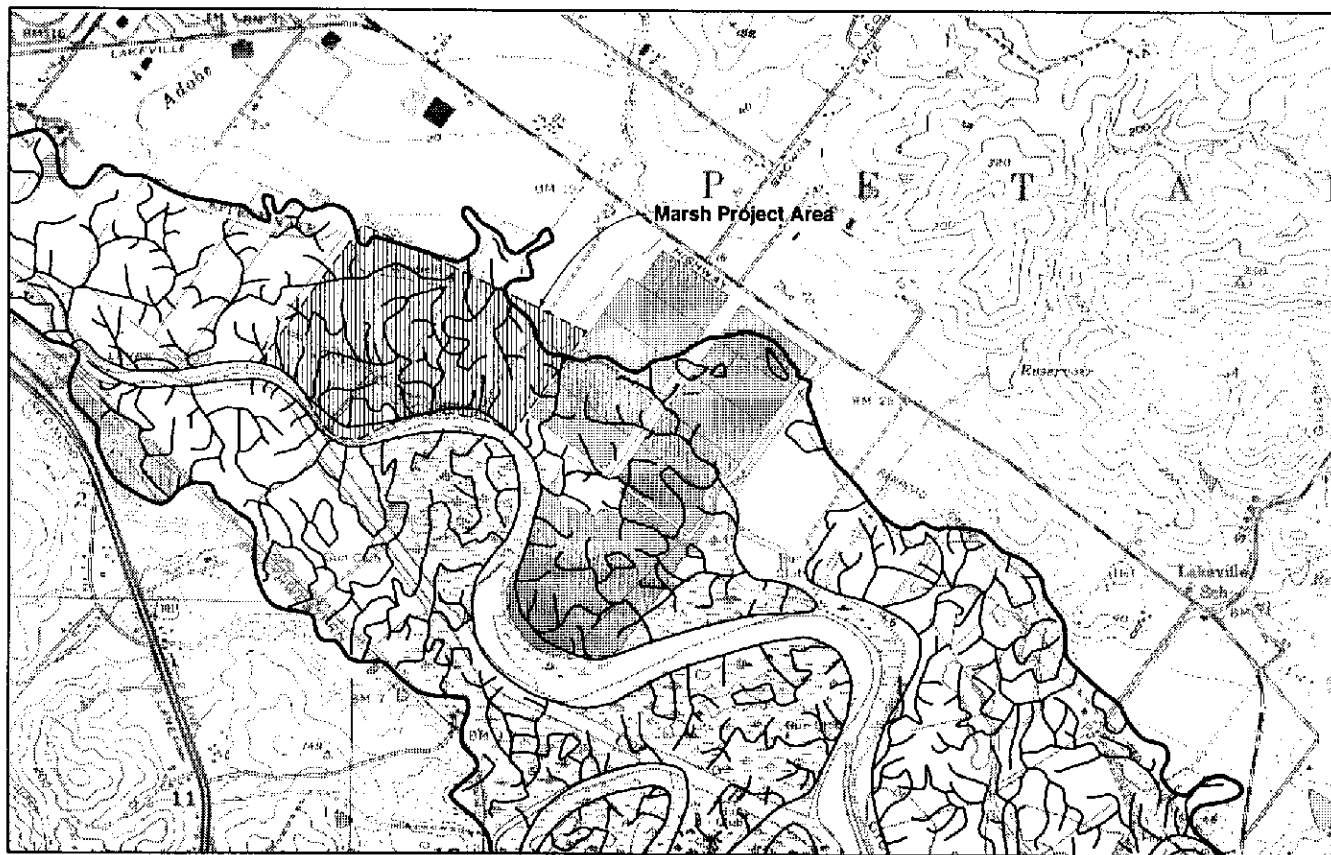


NOTE: This diagram does not show any wetlands beyond the planning area or that may be uncovered by site specific survey.



This map illustrates the extensive tidal marsh that exists along the lower Petaluma River that is lacking along other North Bay and Delta rivers and streams. The Petaluma Marsh Restoration Project would extend the tidal marsh to connect the fragmented habitats at the upper end of the marsh, improve water circulation by breaching of levees, soften the banks of the river with wetland terraces, and install biotechnical bank stabilization measures.

1-003445



Source: Nichols and Wright 1991; USGS Petaluma River 7.5-minute quadrangle, photorevised 1980.



Jones & Stokes Associates, Inc.

Figure 2
Historic Marshlands

1-003445


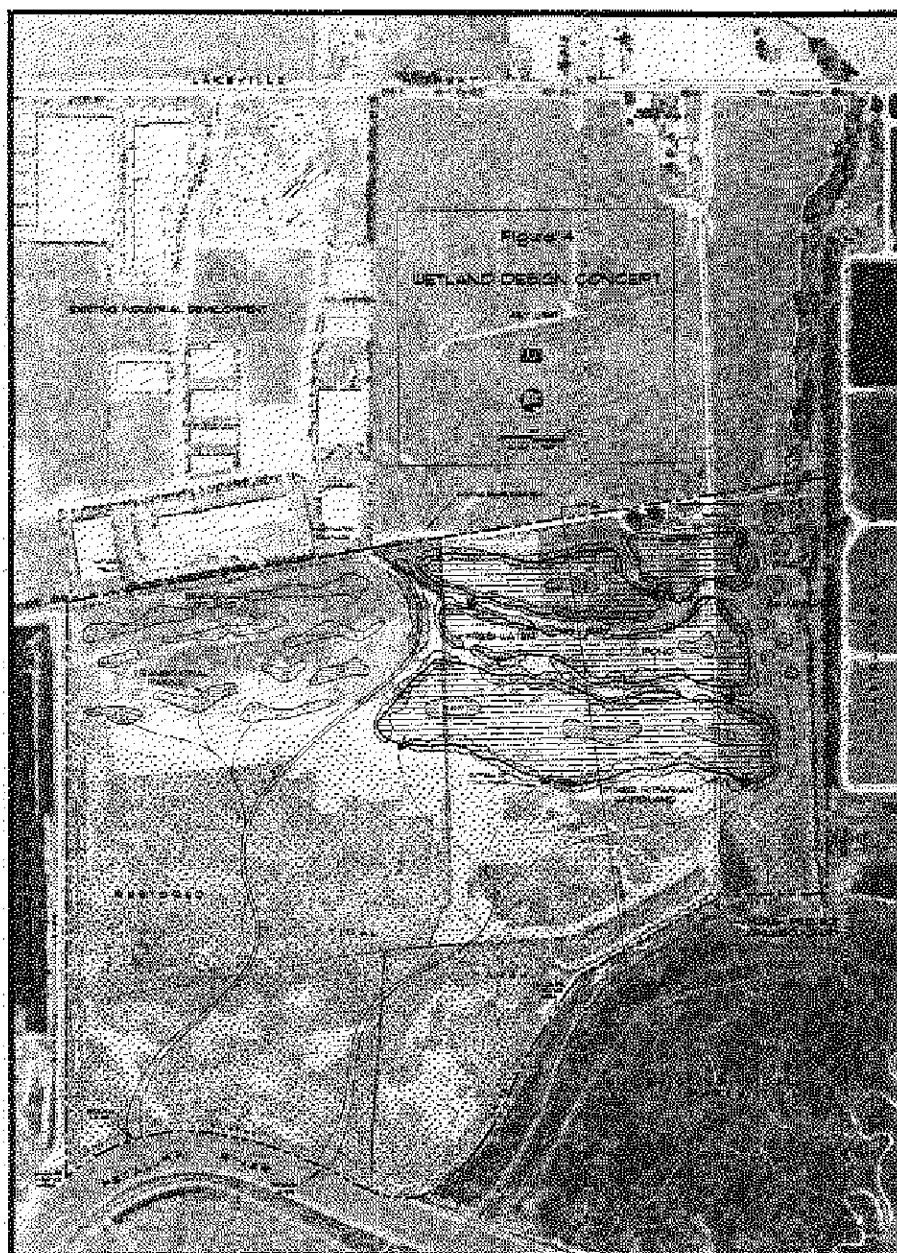
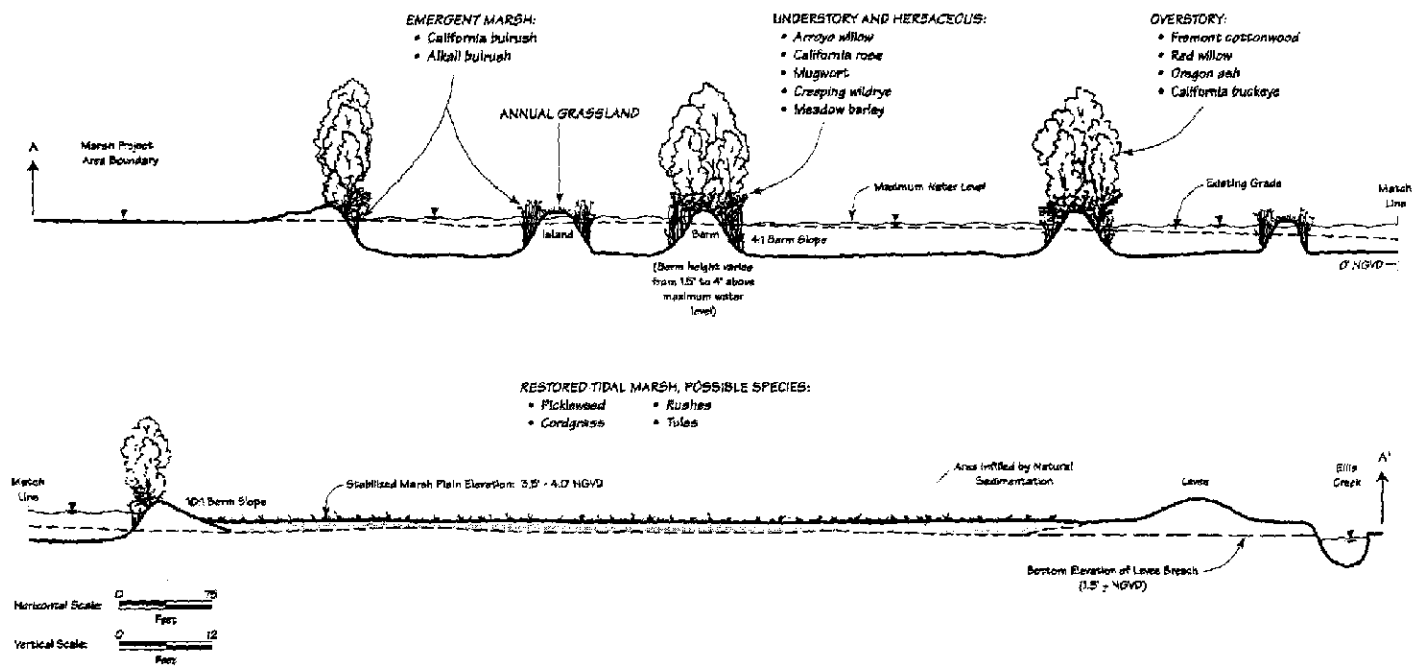
[illegible] Jones & Stokes Associates, Inc.

Figure 3
Vegetation/Land Cover

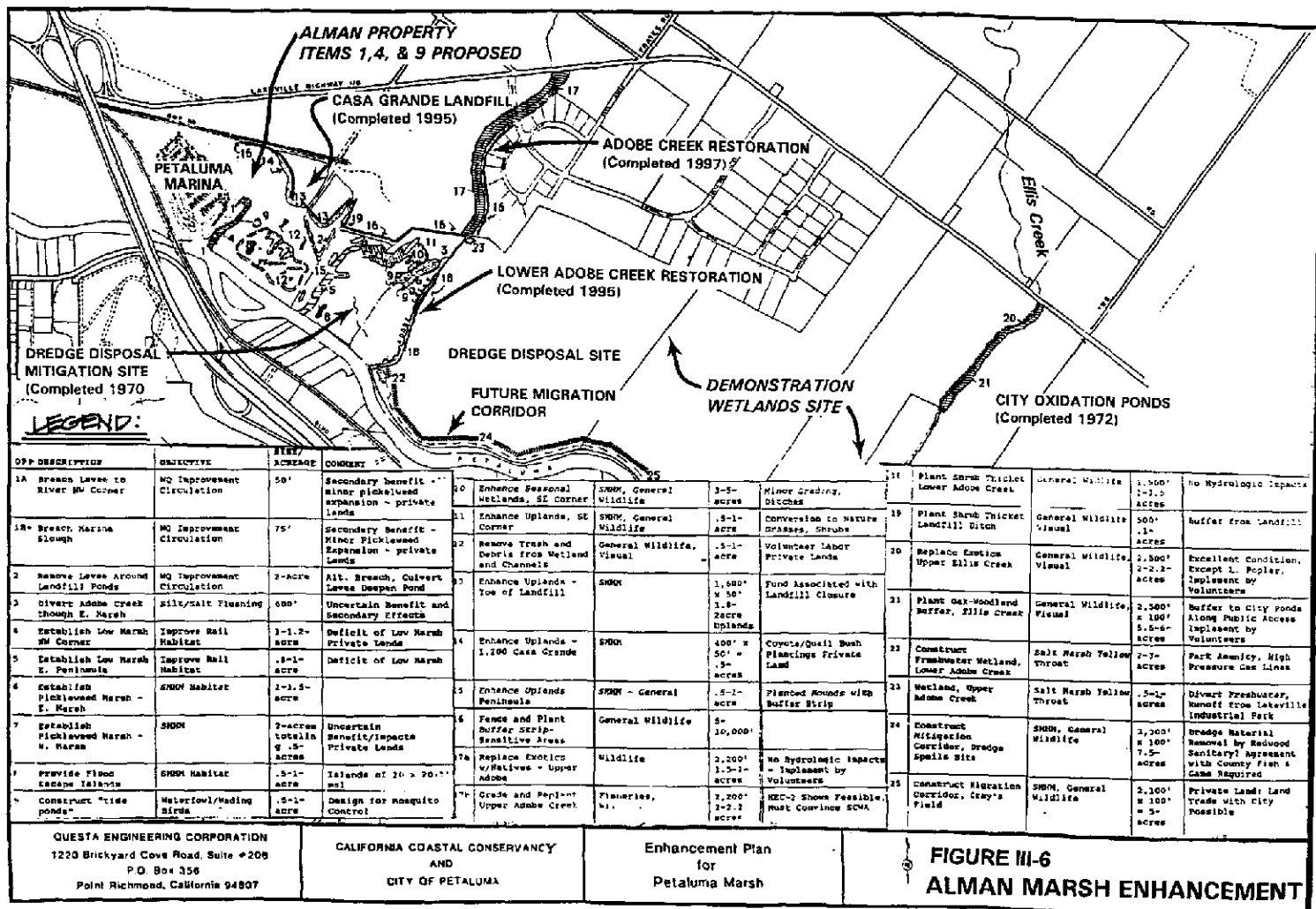
1-003446





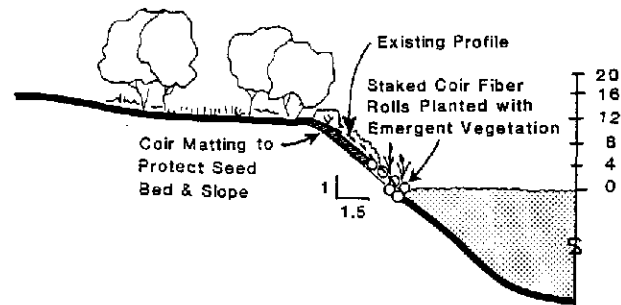
Jones & Stokes Associates, Inc.

Figure 5
Schematic Cross Section of Freshwater Pond/Mixed
Riparian Woodland and Restored Tidal Marsh



BANK STABILIZATION AND RESTORATION

ALTERNATIVE #7 - COIR MATTING & ROLLS



ALTERNATIVE #8 - NATURAL 2:1 SLOPE WITH WILLOW WATTLING

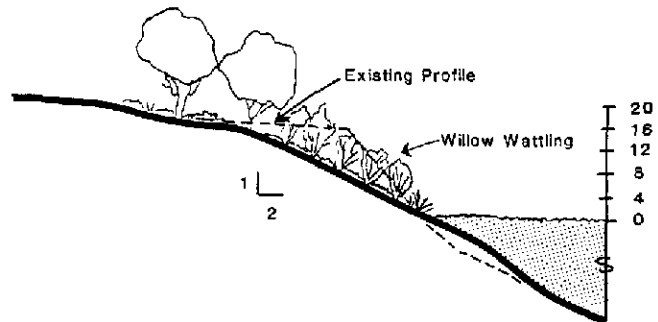
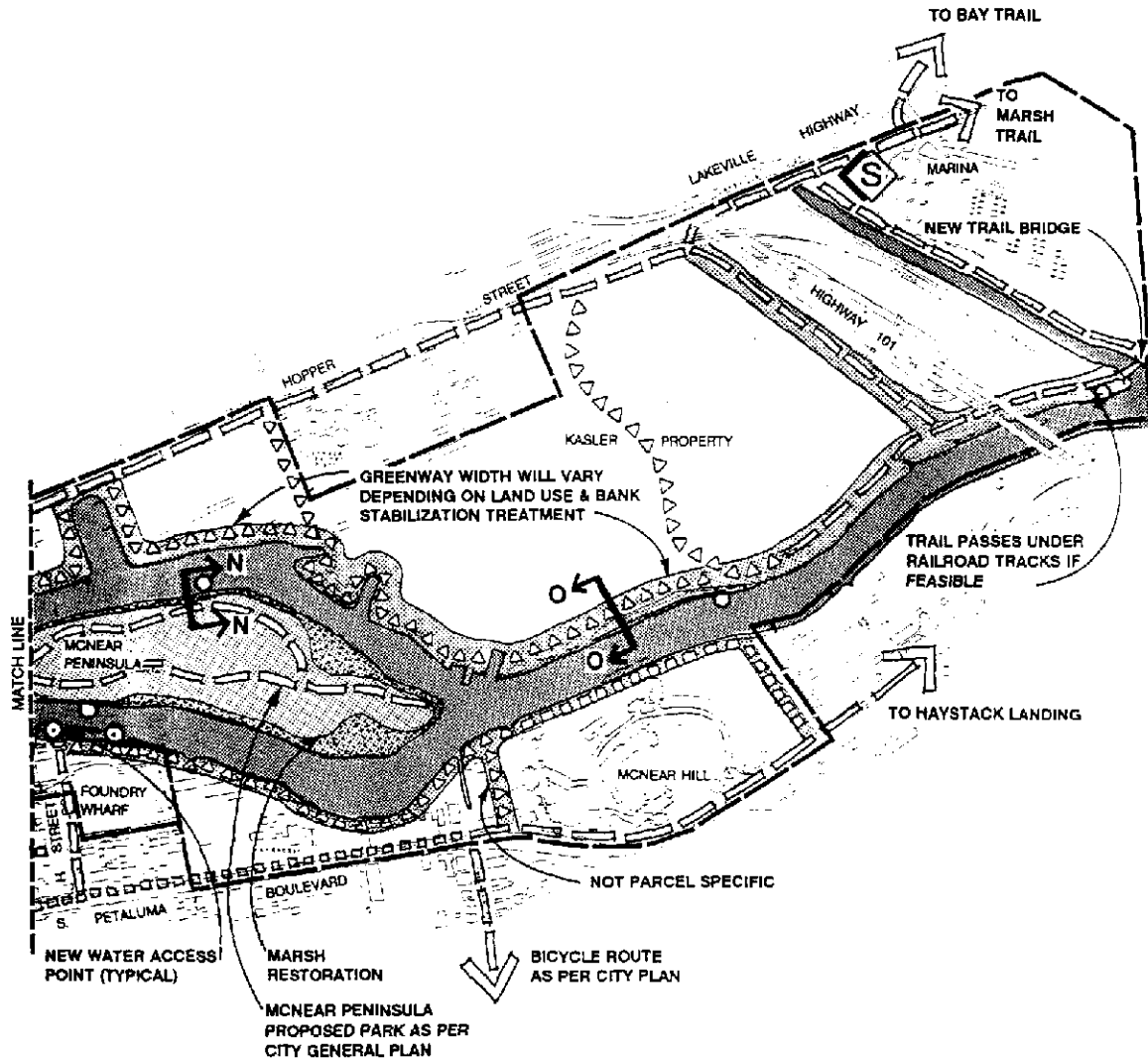


FIGURE III-7

BANK STABILIZATION MEASURES FOR ALMAN MARSH AND MCNEAR PENINSULA



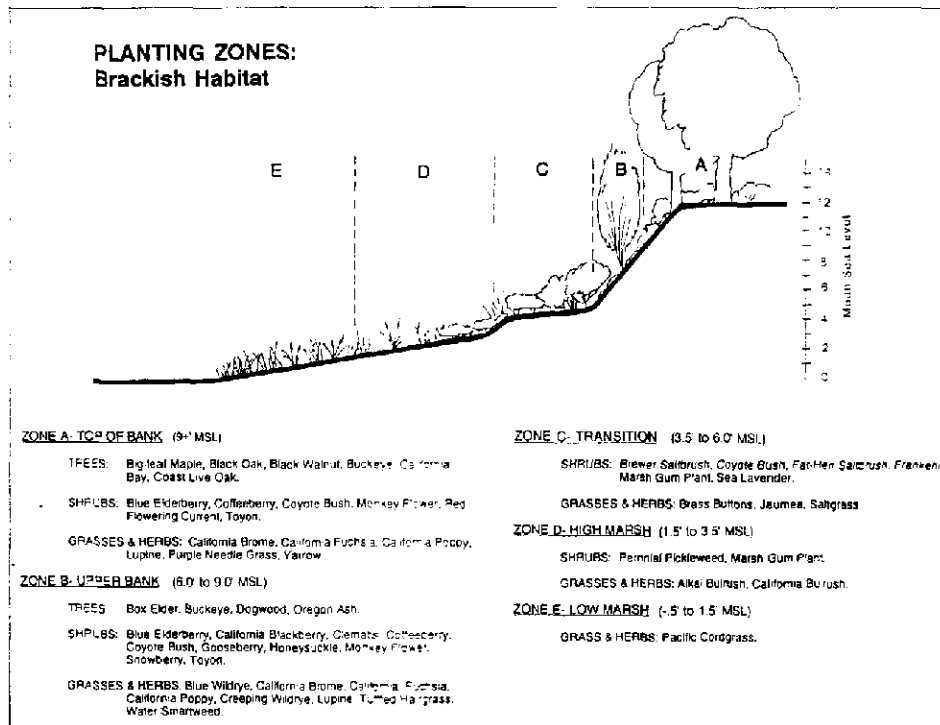
**FIGURE III-8
TIDAL MARSH RESTORATION
AT MC NEAR PENINSULA**

Brackish Water Habitat

In general, restoration in this habitat will consist of a 5- to 10-foot-wide emergent marsh zone where possible in the reaches below "D" Street, with shrubs along the bank slopes, and the top of bank planted with native trees, shrubs and groundcovers. The emergent marsh may be as wide as 20 to 25 feet in certain locations such as along the Kasler parcel (formerly the J.H. Pomeroy property) and at McNear Peninsula. The emergent marsh along the Warehouse Segment and in the downtown area will be 5 to 10 feet wide where it can be established. Pockets of existing tules should be protected, such as in the Turning Basin by the floating docks behind the Golden Eagle Shopping Center.

Typically, the brackish water reaches of the river will be planted with such emergent marsh species as cordgrass and alkali bulrush at water's edge, transitioning upland through pickleweed and saltgrass to such streamside shrub species as gum plant, quailbush, fat hen, coyote bush, and California rose. In many areas the slopes must be flattened or laid back and special biogeotechnical methods utilized to reduce wave erosion problems and permit establishment of the native marsh vegetation (see 5.3 Bank Stabilization).

Bank slope and top of bank plantings should be established where possible upstream of the D Street Bridge, including replacement or interplanting of rip-rap.



**CROSS SECTION OF TIDAL MARSH
RESTORATION AT MCNEAR PENINSULA**

FIGURE III-9

FIGURE III-10

Demonstration Wetlands Project

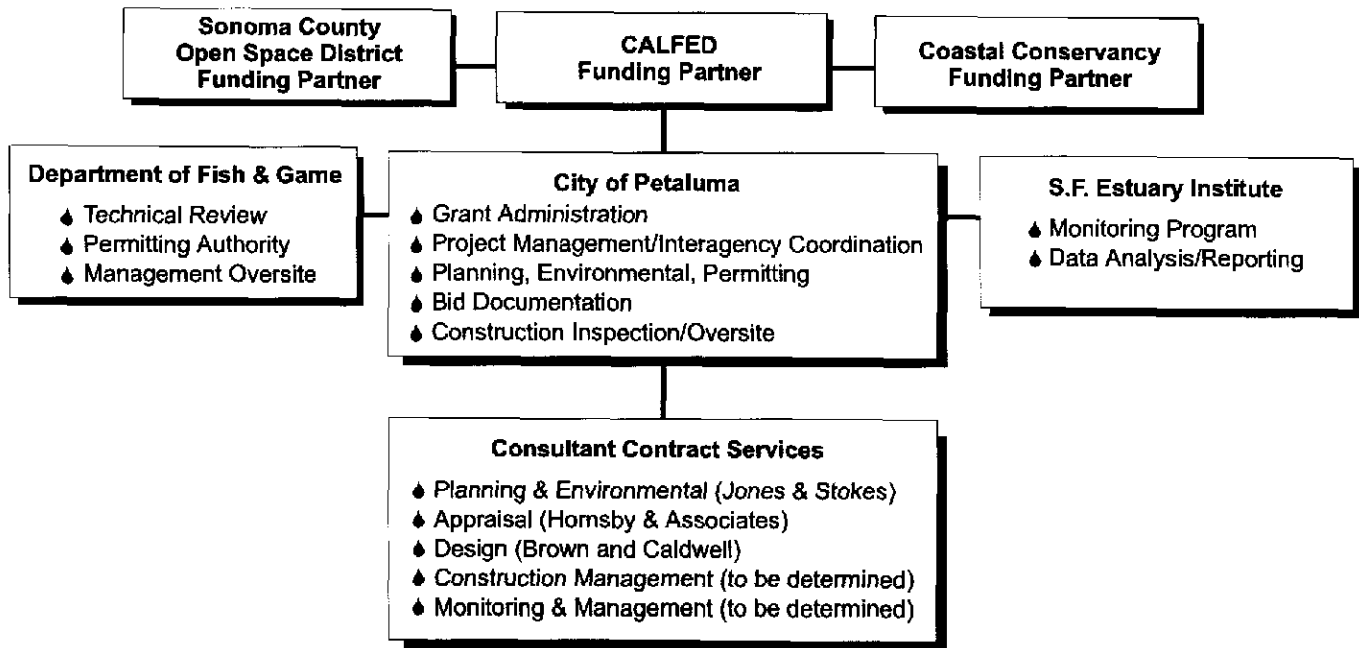


FIGURE III-11

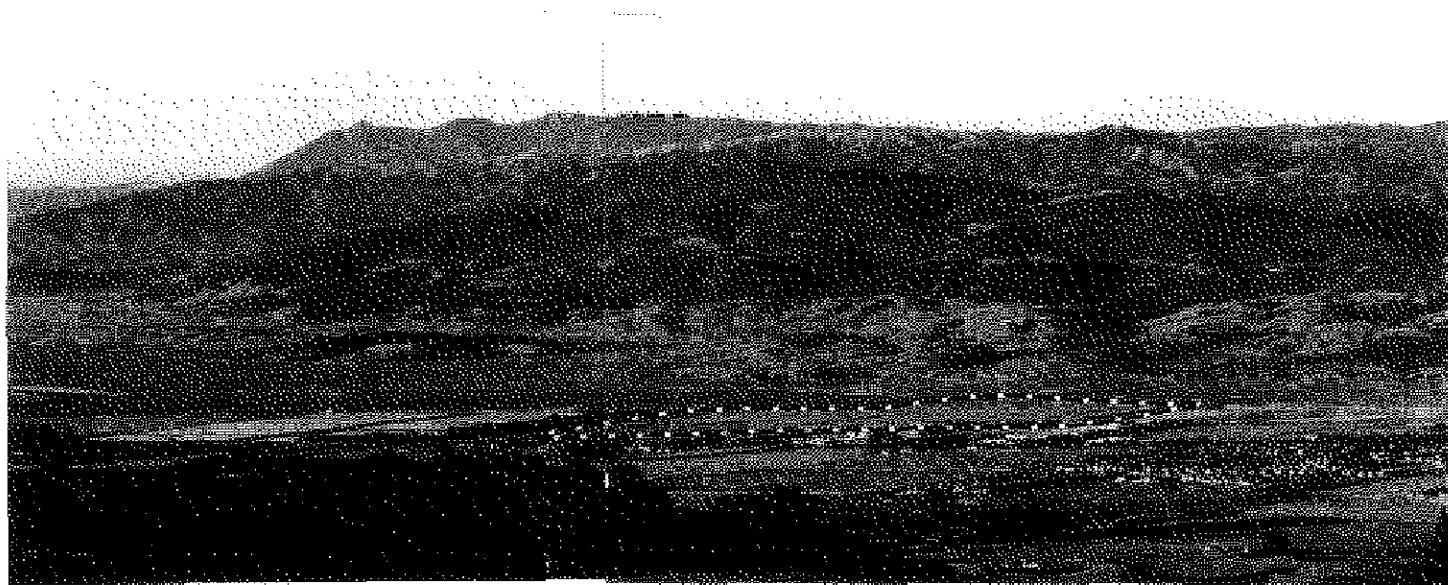


The Petaluma River supports an extensive tidal marsh in the lower end of the watershed that provide important nursery habitat and food source for anadromous fish and also provide habitat for many endangered tidal marsh species.

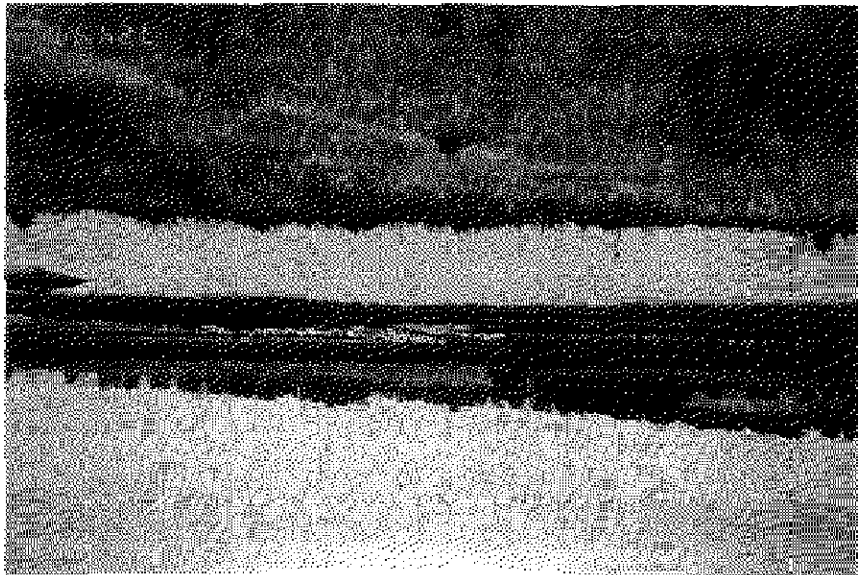


FIGURE III-12

View from Lafferty Ranch of Adobe Creek riparian corridor in foreground looking at the Petaluma River Marsh. The City's Oxidation Ponds are visible in the lower right with Mt. Tamalpais towering above. Gross Field airport is visible in the center of the photo. San Pablo Bay and Hamilton Airfield are visible in the upper left corner. The tidal marsh provides critical rearing habitat for anadromous fish and supports many endangered species.



View of the upper end of the Petaluma River Marsh showing the City's Dredge Disposal site in the lower right hand corner, the City's Oxidation Ponds in the lower left hand corner and the proposed site for acquisition is visible in between. Mt. Tamalpais towers above the Navato Hills which form the boundary of the Petaluma River Watershed.



The City's Dredge Disposal site provides important seasonal wetland habitat for a variety of migratory waterfowl and shorebirds. This bunch of pelicans can often be seen from the adjacent pathway that extends along Adobe Creek to the Petaluma River. The Petaluma Marsh Enhancement Plan calls for restoration of a tidal marsh "migration corridor" along the dredge disposal site. The City is also evaluating beneficial reuse of dredge spoils in conjunction with the City's biosolids management program and demonstration marsh as well as, utilizing recycled water to enhance the seasonal habitat values of this site as an adaptive management technique.

SECTION IV COSTS AND SCHEDULE

*"Make no small plans, for they fail to inspire the hearts of men.
Make only big plans, for they contain magic that will compel men's actions."*

Daniel Burnham, 1903
"Father of City Planning"

IV. COSTS AND SCHEDULE TO IMPLEMENT PROPOSED PROJECT

The estimated costs for each phase of the project and funding sources are provided in Tables IV-1 through IV-3. A summary of the costs, funding sources and budget is provided in Table IV-4. The schedule for completion of the work is provided in Figure IV-1.

Site acquisition for the Demonstration Wetlands Project is estimated at \$1,073,400 with a requested CALFED participation of \$350,000 in FY 97-98. These funds are urgently needed to close the sale before the site is sold to other development interests. The owner has expressed a willingness to sell the lower portion of the site to the City, if the escrow can close this year. There are other development interests in this site, including a possible golf course, state fairgrounds and stockyard, which the owner wishes to pursue.

Additional funding from CALFED in the amount of \$7,400 is requested in FY 98-99 for design services for the Alman Marsh Enhancement. Design services for the Demonstration Wetlands and McNear Peninsula Tidal Restoration will be funded by the City during the same period with park and sewer fees. Improvements at the three sites will be packaged as a single project for public bid to reduce the construction costs. An additional \$421,200 is requested in FY 99-00 to complete construction of both the Alman Marsh Enhancements and McNear Peninsula Tidal Restoration components. Construction of the Demonstration Wetlands project will be funded through an increase in the City's sewer rates along with construction of the City's new tertiary wastewater treatment facility.

The City has not identified any third party impacts. All site acquisitions have been (or will be) completed from willing sellers. The planning and environmental review process revealed no significant impacts that were not fully mitigated.

A supplemental environmental document is currently being prepared for the Demonstration Wetlands Project to address discharge requirements and the federal permit requirements under Section 404 of the Clean Water Act as well as, meet requirements for State revolving loan funds.

The City has the resources and ability to fully implement the Petaluma Marsh Enhancement Project with some funding assistance from CALFED.

**Petaluma Model Watershed
Restoration and Management Program**

TABLE IV-1

**PETALUMA MARSH DEMONSTRATION WETLANDS PROJECT
SUMMARY COST ESTIMATE AND PROPOSED BUDGET**

PROJECT PHASE & TASK	OVERHEAD ADMIN	SERVICE CONTRACTS	MATERIALS ACQUISITION	TOTAL PROJECT COSTS	REQUESTED CALIFED GRANT FY 97 98 FY 98 99 FY 99 00			TOTAL CALIFED GRANT	LOCAL MATCH	SPONSOR/FUNDING PARTNERS
REAL ESTATE TRANSACTIONS										
Demonstration Wetlands										
1. Phase I Site Assessment	\$ -	\$ 5,800	\$ -	\$ 5,800	\$ -	\$ -	\$ -	\$ -	\$ 6,000	City of Petaluma
2. Appraisal Services	-	6,000	-	6,000	-	-	-	-	6,000	City of Petaluma
3. ROW Mapping/Legal Description	-	1,800	-	1,800	-	-	-	-	1,800	City of Petaluma
4. Land Acquisition	-	-	1,050,000	1,050,000	350,000	-	-	350,000	700,000	So. Co. Open Space District/City
5. Closing Costs (escrow, documentation & title)	-	-	3,000	3,000	-	-	-	-	3,000	City of Petaluma
6. Project Management and Administration	6,800	-	-	6,800	-	-	-	-	6,800	City of Petaluma
SUBTOTAL ACQUISITION COSTS	\$ 6,800	\$ 13,800	\$ 1,053,000	\$ 1,073,600	\$ 350,000	\$ -	\$ -	\$ 350,000	\$ 723,400	
McNear Petaluma Tidal Marsh Restoration										
1. Phase I Site Assessment	\$ -	\$ 6,000	\$ -	\$ 6,000	\$ -	\$ -	\$ -	\$ -	\$ 6,000	City of Petaluma
2. Appraisal Services	-	4,500	-	4,500	-	-	-	-	4,500	City of Petaluma
3. ROW Mapping/Legal Description	-	1,400	-	1,400	-	-	-	-	1,400	City of Petaluma
4. Land Acquisition	-	-	150,000	150,000	-	-	-	-	150,000	So. Co. Open Space District
5. Closing Costs (escrow, documentation & title)	-	-	3,300	3,300	-	-	-	-	3,300	City of Petaluma
6. Project Management and Administration	12,600	-	-	12,600	-	-	-	-	12,600	City of Petaluma
SUBTOTAL ACQUISITION COSTS	\$ 12,600	\$ 11,900	\$ 153,300	\$ 177,800	\$ -	\$ -	\$ -	\$ -	\$ 177,800	
Albion Marsh Enhancement										
1. Appraisal Services	\$ -	\$ 3,000	\$ -	\$ 3,000	\$ -	\$ -	\$ -	\$ -	\$ 3,000	City of Petaluma
2. ROW Mapping/Legal Description	-	1,800	-	1,800	-	-	-	-	1,800	City of Petaluma
3. Land Acquisition	-	-	60,000	60,000	-	-	-	-	60,000	So. Co. Open Space District
4. Closing Costs (escrow, documentation & title)	-	2,300	-	2,300	-	-	-	-	2,300	City of Petaluma
5. Project Management and Administration	-	432	-	432	-	-	-	-	432	City of Petaluma
SUBTOTAL ACQUISITION COSTS	\$ -	\$ 7,532	\$ 60,000	\$ 67,532	\$ -	\$ -	\$ -	\$ -	\$ 67,532	
TOTAL ACQUISITION COSTS	\$ 18,400	\$ 33,032	\$ 1,288,200	\$ 1,319,732	\$ 350,000	\$ -	\$ -	\$ 350,000	\$ 898,732	City, So. Co. Open Space

**Petaluma Model Watershed
Restoration and Management Program**

**TABLE IV-2
PETALUMA MARSH DEMONSTRATION WETLANDS PROJECT
COST ESTIMATE AND PROPOSED BUDGET**

PROJECT PHASE & TASK	OVERHEAD ADMIN	SERVICE CONTRACTS	MATERIALS ACQUISITION	TOTAL PROJECT COSTS	REQUESTED CALPED GRANT			TOTAL CALPED GRANT	LOCAL MATCH	SPONSOR/FUNDING PARTNERS
					FY 97-98	FY 98-99	FY 99-00			
PROFESSIONAL SERVICES - DESIGN PHASE										
Demonstration Wetlands										
1. Planning, Environmental Review and Permitting	\$ -	\$ 296,000	\$ -	\$ 296,000	\$ -	\$ -	\$ -	\$ -	\$ 296,000	
2. Design Services		318,150		318,150					318,150	
3. Project Management & Administration	122,830			122,830					122,830	
SUBTOTAL PROFESSIONAL SERVICES COST	\$ 122,830	\$ 614,150	\$ -	\$ 736,980	\$ -	\$ -	\$ -	\$ -	\$ 736,980	
Altman Marsh Enhancements										
1. Planning, Environmental Review and Permitting	\$ -	\$ 56,000	\$ -	\$ 56,000	\$ -	\$ -	\$ -	\$ -	\$ 56,000	City, Coastal Conservancy
2. Design Services (Costa Engineering)		3,000		3,000		4,500		4,500	-	City of Petaluma
3. Project Management & Administration	2,900			2,900		2,900		2,900	-	City of Petaluma
SUBTOTAL PROFESSIONAL SERVICES COST	\$ 2,900	\$ 61,000	\$ -	\$ 63,900	\$ -	\$ 7,400	\$ -	\$ 7,400	\$ 68,000	
McNear Peninsula Tidal Marsh Restoration										
1. Planning, Environmental Review and Permitting	\$ -	\$ 76,000	\$ -	\$ 76,000	\$ -		\$ -	\$ -	\$ 76,000	City, Coastal Conservancy
2. Design Services (Costa Engineering)		40,000		40,000					-	City
3. Project Management & Administration	6,800			6,800					-	City
SUBTOTAL PROFESSIONAL SERVICES COST	\$ 6,800	\$ 116,000	\$ -	\$ 122,800	\$ -	\$ -	\$ -	\$ -	\$ 76,000	
TOTAL SERVICES COST	\$ 131,530	\$ 791,150	\$ -	\$ 922,680	\$ -	\$ 7,400	\$ -	\$ 7,400	\$ 870,880	City, Coastal Conservancy

**Petaluma Model Watershed
Restoration and Management Program**

**TABLE IV-3
PETALUMA MARSH DEMONSTRATION WETLANDS PROJECT
COST ESTIMATE AND PROPOSED BUDGET**

PROJECT PHASE & TASK	OVERHEAD ADMIN	SERVICE CONTRACTS	MATERIALS ACQUISITION	TOTAL PROJECT COSTS	REQUESTED CALPED GRANT FY 87-88	FY 88-89	FY 89-90	TOTAL CALPED GRANT	LOCAL MATCH	SPONSOR/FUNDING PARTNERS
CONSTRUCTION										
Demonstration Wetlands										
1. Construction Cost Estimate			\$ 2,121,000	\$ 2,121,000				\$ -	\$ 2,121,000	City of Petaluma
2. Construction Contingency			318,150	318,150				-	318,150	City of Petaluma
3. Construction Management, Survey & Inspection		212,100	212,100	212,100				-	212,100	City of Petaluma
4. Project Management & Administration	108,050		108,050	108,050				-	108,050	City of Petaluma
SUBTOTAL CONSTRUCTION	\$ 108,050	\$ 212,100	\$ 2,439,150	\$ 2,757,300	\$ -	\$ -	\$ -	\$ -	\$ 2,757,300	
Albion Marsh Enhancements										
1. Construction Cost Estimate	\$ -	\$ -	\$ 21,000	\$ 21,000	\$ -	\$ -	\$ 21,000	\$ 21,000	\$ -	
2. Construction Contingency			2,100	2,100				-	2,100	
3. Construction Management, Survey & Inspection		1,470	1,470	1,470				-	1,470	
4. Project Management & Administration	630		630	630				-	630	
SUBTOTAL CONSTRUCTION	\$ 630	\$ 1,470	\$ 23,100	\$ 25,200	\$ -	\$ -	\$ 25,200	\$ 25,200	\$ -	CalFed
McNear Peninsula Tidal Marsh Restoration										
1. Construction Cost Estimate	\$ -	\$ -	\$ 330,000	\$ 330,000	\$ -	\$ -	\$ 330,000	\$ 330,000	\$ -	
2. Construction Contingency			33,000	33,000				-	33,000	
3. Construction Management, Survey & Inspection		23,100	23,100	23,100				-	23,100	
4. Project Management & Administration	9,900		9,900	9,900				-	9,900	
SUBTOTAL CONSTRUCTION	\$ 9,900	\$ 23,100	\$ 363,000	\$ 396,000	\$ -	\$ -	\$ 363,000	\$ 396,000	\$ -	CalFed
TOTAL CONSTRUCTION COST	\$ 118,580	\$ 236,670	\$ 2,825,250	\$ 3,178,500	\$ -	\$ -	\$ 421,200	\$ 421,200	\$ 2,757,300	City, Coastal Conservancy, Open Space

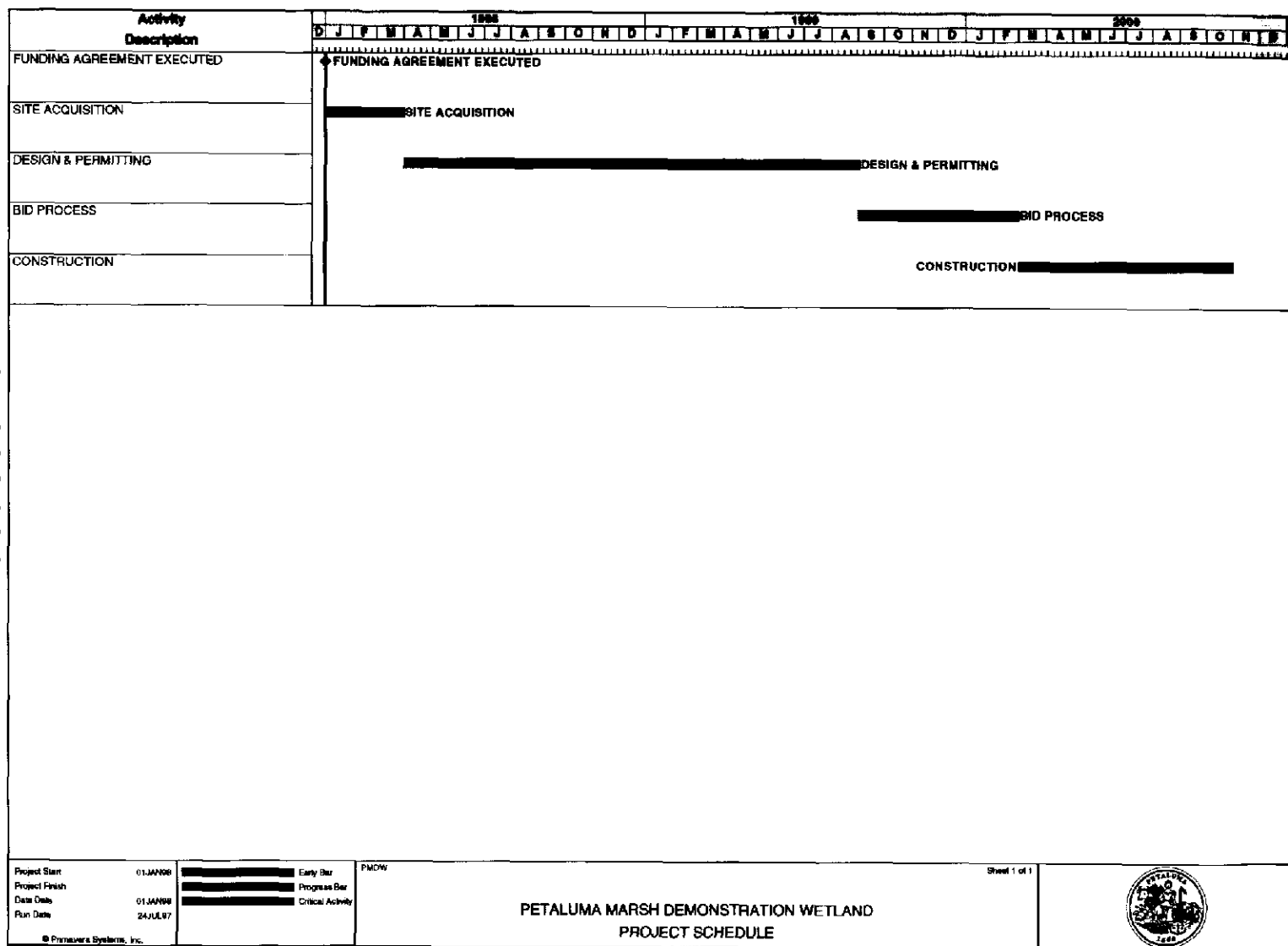
**Petaluma Model Watershed
Restoration and Management Program**

TABLE IV-4

**PETALUMA MARSH DEMONSTRATION WETLANDS PROJECT
SUMMARY COST ESTIMATE AND PROPOSED BUDGET**

PROJECT PHASE & TASK	OVERHEAD ADMIN	SERVICE CONTRACTS	MATERIALS ACQUISITION	TOTAL PROJECT COSTS	REQUESTED CALFED GRANT			TOTAL CALFED GRANT	LOCAL MATCH	SPONSOR/FUNDING PARTNERS
					FY 97-98	FY 98-99	FY 99-00			
REAL ESTATE TRANSACTIONS										
Demonstration Wetlands	\$ 8,800	\$ 13,600	\$ 1,053,908	\$ 1,076,308	\$ 350,000	\$ -	\$ -	\$ 350,000	\$ 722,400	
McNear Peninsula Tidal Marsh Restoration	\$ 12,900	\$ 11,900	\$ 153,300	\$ 177,800	\$ -	\$ -	\$ -	\$ -	\$ 177,800	
Altman Marsh Enhancements		\$ 7,532	\$ 60,908	\$ 68,440	\$ -	\$ -	\$ -	\$ -	\$ 67,532	
TOTAL ACQUISITION COSTS	\$ 19,400	\$ 33,032	\$ 1,268,116	\$ 1,318,548	\$ 350,000	\$ -	\$ -	\$ 350,000	\$ 968,732	City, So. Co. Open Space
PROFESSIONAL SERVICES - DESIGN PHASE										
Demonstration Wetlands	\$ 122,838	\$ 914,150	\$ -	\$ 1,036,988	\$ -	\$ -	\$ -	\$ -	\$ 736,988	
Altman Marsh Enhancements	\$ 2,900	\$ 61,000	\$ -	\$ 63,900	\$ -	\$ 7,400	\$ -	\$ 7,400	\$ 56,500	
1. Planning, Environmental Review and Permits	\$ -	\$ 76,000	\$ -	\$ 76,000	\$ -	\$ -	\$ -	\$ -	\$ 76,000	City, Coastal Conservancy
2. Design Services (Civil/E Engineering)	\$ 5,000	\$ 40,000	\$ -	\$ 45,000	\$ -	\$ -	\$ -	\$ -	\$ 40,000	
3. Project Management & Administration	\$ 5,900	\$ -	\$ -	\$ 5,900	\$ -	\$ -	\$ -	\$ -	\$ 5,500	
McNear Peninsula Tidal Marsh Restoration	\$ 5,990	\$ 116,800	\$ -	\$ 122,790	\$ -	\$ -	\$ -	\$ -	\$ 121,800	
TOTAL SERVICE COST	\$ 131,838	\$ 751,150	\$ -	\$ 882,988	\$ -	\$ 7,400	\$ -	\$ 7,400	\$ 818,788	City, Coastal Conservancy
CONSTRUCTION										
Demonstration Wetlands	\$ 106,050	\$ 212,100	\$ 2,438,150	\$ 2,756,300	\$ -	\$ -	\$ -	\$ -	\$ 2,787,300	
Altman Marsh Enhancements	\$ 930	\$ 1,470	\$ 23,100	\$ 25,500	\$ -	\$ -	\$ 25,200	\$ 25,200	\$ -	CalFed
McNear Peninsula Tidal Marsh Restoration	\$ 8,900	\$ 33,100	\$ 383,000	\$ 424,000	\$ -	\$ -	\$ 396,000	\$ 396,000	\$ -	CalFed
TOTAL CONSTRUCTION COST	\$ 115,880	\$ 246,670	\$ 2,844,250	\$ 3,206,800	\$ -	\$ -	\$ 421,200	\$ 421,200	\$ 1,183,300	City, Coastal Conservancy, Open Space
TOTAL FUNDING BUDGET REQUESTED										
	\$ 267,518	\$ 1,000,852	\$ 4,091,550	\$ 5,419,920	\$ 350,000	\$ 7,400	\$ 421,200	\$ 778,600	\$ 4,842,812	City, Coastal Conservancy, Open Space

1-003464



1-003464

SECTION V
APPLICANT'S QUALIFICATIONS

*"We must see nature as a community
to which we belong, rather than
a community belonging to us."*

Aldo Leopold
A Sand County Almanac

V. APPLICANT QUALIFICATIONS

The City of Petaluma has worked diligently on planning for restoration of the Petaluma River and tributary watersheds and has a proven track record of success on many restoration projects. Our experience in successful mitigation and restoration projects is illustrated in the attached Table V-1 which lists the many projects that have been completed or are underway. The City's approach involves development of a project team with the skills, expertise, knowledge and experience to bring a project from conceptual planning through environmental review, site acquisition, design and construction as well as provide for long term maintenance and management. The City's interdepartmental project team is complimented by outside agency support and consultant contract services where appropriate to provide a multi-disciplined team. The Project Team and roles of each participant are illustrated in Figure V-1. As a local government agency, the City has extensive experience with right-of-way procedures for site acquisition and bid procedures for construction projects. As the utility provider and primary land use authority, the City is also in a unique position to leverage CALFED funding with local contributions from the private sector and other participating agencies. The City of Petaluma also has extensive human resources available in an actively involved community of well qualified volunteers as described in Figure V-2.

Project management, grant administration and interagency coordination will be coordinated through the City's Planning Department with Jennifer Barrett, Senior Planner as the project manager. Jennifer Barrett has a proven track record of success in planning, environmental review, permitting and project management for the City's capital improvement program. Her recent accomplishments include completion of the Facilities Plan for the Wastewater Facilities Project, Petaluma Marsh Enhancement Project Phase I, Adobe Creek Restoration Project, the Biological Mitigation Plan for the Rainier Interchange and the Lakeville Highway Wetland Mitigation Plan.

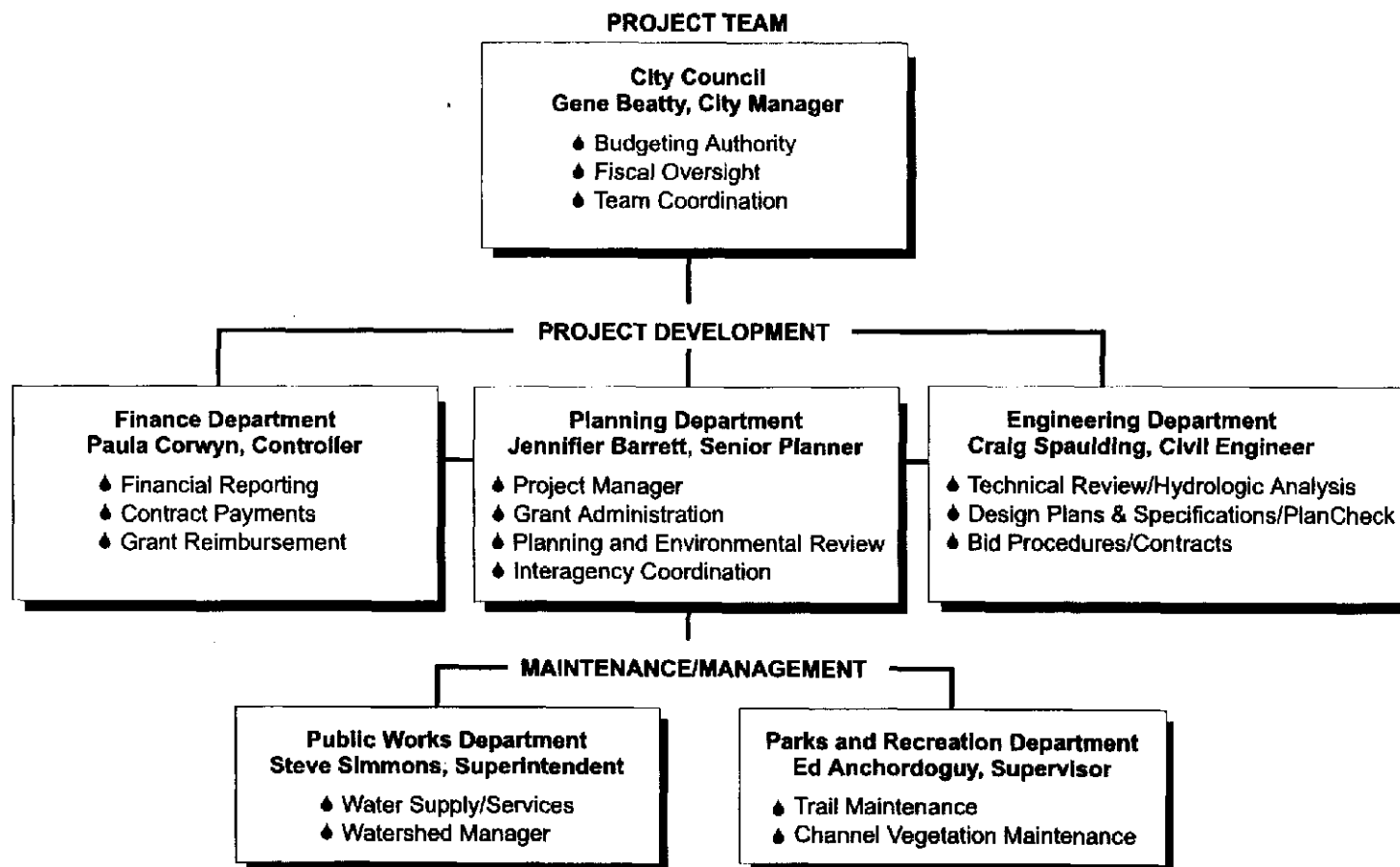
Technical assistance, plan review and bid procedures will be handled through the City's Engineering Department by Craig Spaulding, Associate Civil Engineer. Craig Spaulding has extensive experience in plan checking and design with particular expertise in hydrologic analysis and grading/earthwork.

Financial Reporting, contract payments and grant reimbursement requests will be managed through the City's Finance Department by Paula Corwyn, Controller. The Finance Department has managed numerous state and federal grants and has received numerous awards for excellence in financial reporting from both the Government Finance Officers Association and the California Society of Municipal Finance Officers.

Interagency support will be provided by the Carl Wilcox, Regional Manager with Department of Fish and Game. Katie Hart of the Regional Water Quality Control Board is also assigned to the project and will provide ongoing oversight of the monitoring program. Additional interagency support will be provided through consultation with the Sonoma Marin Vector Control Agency, U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Bay Conservation and Development Commission, National Marine Fisheries Service and other responsible agencies.

Jay Davis of the S.F. Estuary Institute is under contract with the City to provide assistance in development of the monitoring program and ongoing support for providing data analysis and management recommendations.

FIGURE V-1
City of Petaluma
Petaluma Watershed
Model Restoration and Management Program



Petaluma has a long history of active citizen participation and volunteerism. Civic interest and pride in all sorts of social, political, recreational, and environmental issues have made Petaluma a very special place to live and work. This volunteer spirit may be used to help maintain the river corridor as a safe and healthy environment, as an educational tool for our schools, and as the principal image of our community.

TYPICAL VOLUNTEER ORGANIZATIONS

- BUSINESSES & CORPORATIONS
- PROFESSIONAL ORGANIZATIONS
- SERVICE & SOCIAL CLUBS
- EDUCATIONAL GROUPS & CLASSES: (e.g., United Anglers of Casa Grande, Youth for Environmental Action - YEA, Youth for Environmental Service - YES, Adopt a Watershed, Montessori School, and others)
- ENVIRONMENTAL GROUPS: (e.g., Sierra Club, Trout Unlimited, Audubon Society, Urban Creeks Council, Ducks Unlimited, Petaluma River Council, and others)
- NEIGHBORHOOD ASSOCIATIONS: (e.g., People Who Care - Thompson Creek, and others)
- RECREATION & SPORTS ORGANIZATIONS: (e.g., Petaluma Yacht Club, Northbay Rowing Club, Sea Scouts, Petaluma River Festival, and others)



The new Manna and nearby marsh restoration project have drawn attention to the natural and recreational aspects of the downstream river reaches.



Acquisition of McNear Peninsula for a public park, a high priority, is being sought through Sonoma County Agricultural Preservation and Open Space District.

*"We must adopt a central organizing principle,
then use every institution, every method
to restore the earth's balance."*

Al Gore

TABLE - 1
City of Petaluma
PETALUMA RIVER WATERSHED MODEL RESTORATION PROGRAM

SUMMARY OF PROJECTS COMPLETED OR UNDERWAY

PROJECT PHASE/TYPE	STATUS	ESTIMATED COST	FUNDING SPONSOR
PLANNING AND ENVIRONMENTAL REVIEW			
<i>Petaluma River Marsh Restoration (Tidal Reaches)</i>			
Petaluma Marsh Enhancement Plan	Approved December 1992	30,000	Coastal Conservancy
<i>Petaluma River Riparian and Aquatic Habitat Restoration</i>			
Petaluma River Access and Enhancement Plan	Approved May 1996	300,000	Coastal Conservancy
<i>Petaluma River Upper Watershed Restoration</i>			
Restoration Design and Management Guidelines for the Petaluma River Watershed	Approved July 1996	68,000	Dept. of Water Resources
Petaluma Watershed Planning Program (Resource Conservation District 206) grant	Underway 1997-00	194,000	Resource Conservation District
Ellis Creek Enhancement Plan	Approved June 1996	30,000	City of Petaluma
<i>Adobe Creek Riparian and Aquatic Habitat Restoration</i>			
Lefferty Access and Management Plan (Adobe Creek Headwaters)	Underway 1997-98	78,000	City of Petaluma
Adobe Creek Restoration Plan and Management Program	Approved July 1996	18,000	Private Contribution (Queste Engineering)
SITE ACQUISITIONS			
<i>Petaluma River Marsh Restoration</i>			
Oxidation Pond Site 45 acres dedication to tidal marsh restoration	Acquired 1972	300,000	City of Petaluma
Dredge Disposal Site 45 acres dedication to tidal marsh restoration	Acquired 1970	200,000	City of Petaluma
Petaluma Marina (7 acres former Schollenberger Park)	Acquired 1989	1,050,000	County of Sonoma Dedication
Alman Marsh Acquisition of 20 acres tidal marsh	Acquired 1997	54,000	So. Co. Open Space District
<i>Petaluma River Riparian and Aquatic Habitat Restoration</i>			
McNear Peninsula 20 acres	Acquired 1997	170,000	So. Co. Open Space District
Petaluma River Greenway Block Grant Acquisitions for Upper Reaches	Underway 1997-03	1,000,000	So. Co. Water Agency/So. Co. Open Space District
Petaluma Demonstration Wetlands Site (Grayview Farms)	Underway 1997-98	1,400,000	City of Petaluma/So. Co. Open Space District
Petaluma River Corona Reach Flood Easement 20 acres	Acquired 1979	800,000	Developer Contribution
Petaluma River Vista site acquisition	Acquired 1997	80,000	City of Petaluma/TEA Grant
<i>Adobe Creek Riparian and Aquatic Habitat Restoration</i>			
Adobe Creek Upper Reach Cross Creek Dedication 40 acres	Acquired 1997	280,000	Developer Contribution
Adobe Creek Lower Reach Lakaville Business Park Dedication			
Upper Reach Restoration (Cross Creek Restoration and Mitigation Project)			
IMPLEMENTATION/CONSTRUCTION			
<i>Adobe Creek Restoration Project</i>			
Adobe Creek Fish Hatchery	Completed 1992	600,000	United Anglers/Private Donations
Lower Reach Restoration (Lakaville Highway Mitigation Project)	Completed 1995	225,000	City of Petaluma
Middle Reach Enhancement (downstream of McDowell Blvd.)	Completed 1995	22,000	Petaluma Tree People
Middle Reach Demonstration Restoration Project (Phase II)	Under Construction 1997	335,000	Environmental Enhancement Mitigation Program
Middle Reach Enhancement (upstream of Sartori Drive)	Completed 1985	10,000	United Anglers
Middle Reach Restoration (Fairway Meadows Mitigation Project)	Completed 1989	130,000	Developer Contribution
Upper Reach Restoration (Adobe Creek Golf Course Mitigation Project)	Completed 1985	260,000	Developer Contribution
Upper Reach Restoration (Cross Creek Restoration and Mitigation Project)	In Design for Const. 1999	250,000	Developer Contribution
Adobe Road Fish Ladder (County of Sonoma)	In Design for Const. 1999	40,000	United Anglers/NFWS
<i>Petaluma Marsh Enhancement Project</i>			
Oxidation Ponds Marsh Mitigation Project (45 acres tidal marsh restoration)	Completed 1972	40,000	City of Petaluma
Dredge Disposal Site Mitigation Project (45 acres tidal marsh restoration)	Completed 1970	40,000	City of Petaluma
Petaluma Marina Excavation and Marsh Enhancement (17-acre basin)	Completed 1987	1,000,000	City of Petaluma
Casa Grande Landfill Closure & Marsh Enhancement (10 acre tidal marsh/9 ac. upland)	Completed 1994	440,000	City of Petaluma
Schollenberger Park Lower Adobe Creek Fencing, Trailhead and Pathway Improvements	Completed 1985	150,000	City of Petaluma/State Grant
<i>Petaluma River Riparian and Aquatic Habitat Restoration</i>			
Payran Reach Flood Control Project Mitigation	In Design for Const. 1998	260,000	U.S. Army Corps of Engineers
Willow Brook Middle & Upper Reach Flood Terrace and Riparian Restoration	In Design for Const. 1998	350,000	Redwood Business Park Contribution
Corona Reach Riparian Restoration (Rainier Ave Mitigation 10 ac. riparian 2 ac. wetland)	In Design for Const. 1999	1,500,000	City of Petaluma
Corona Reach Factory Outlet Wetland Mitigation	Completed 1994	150,000	Developer Contribution
Corona Reach Factory Outlet Riparian Restoration	Completed 1994	125,000	Developer Contribution
TOTAL PROJECT COSTS ESTIMATED		\$ 11,910,000	

funding 17/26/97

1-003469

1-003469

VI. COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The City accepts the standard terms and conditions as stated in the Request for Proposals and will provide the appropriate forms for submittal with the grant agreement as noted in Table D-1. The non-discrimination form is attached with this grant proposal as specified in the Request for Proposals.

The only exception that the City suggests is that the Sonoma County Agricultural Preservation and Open Space District hold the conservation easement over the land, and the City hold fee title. The State will hold an interest in the land below the ordinary high water as specified in State law. The Sonoma County Open Space District will develop the terms of the easement and monitor the conservation easement in perpetuity. The Open Space District is funded through a ¼ cent sales tax and is well structured for this purpose with administrative staff to monitor conservation easements. There is no need for the State to hold title to the land since a qualified open space agency is involved.

The City suggests this title arrangement only to simplify the acquisition process and would dedicate an interest to the State, if necessary to meet the terms of the grant.

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NONDISCRIMINATION COMPLIANCE STATEMENT

Company Name: City of Petaluma

The company named above (hereinafter referred to as "prospective contractor") hereby certifies, unless specifically exempted, compliance with Government Code Section 12990 (a-f) and California Code of Regulations, Title 2, Division 4, Chapter 5 in matters relating to reporting requirements and the development, implementation and maintenance of a Nondiscrimination Program. Prospective contractor agrees not to unlawfully discriminate, harass or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, disability (including HIV and AIDS), medical condition (cancer), age, marital status, denial of family and medical care leave and denial of pregnancy disability leave.

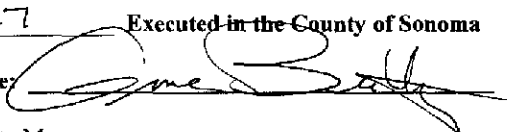
CERTIFICATION

I, the official named below, hereby swear that I am duly authorized to legally bind the prospective contractor to the above described certification. I am fully aware that this certification, executed on the date and in the county below, is made under penalty of perjury under the laws of the State of California.

Official's Name: Gene P. Beatty

Date Executed: 7-23-07 **Executed in the County of** Sonoma

Prospective Contractor's Signature:



Prospective Contractor's Title: City Manager

Prospective Contractor's Legal Business Name: City of Petaluma

compliance / plan83

**SECTION VII
ATTACHMENTS**

**PARTNERSHIP LETTERS AND
LETTERS OF SUPPORT**

*"I truly believe from what I have seen,
that Sonoma County is the chosen spot
of all of the earth, as far as nature is concerned."*

Luther Burbank

Resolution No. 97-152 N.C.S.
of the City of Petaluma, California

**APPROVING THE APPLICATION FOR GRANT FUNDS FROM CALFED FOR
THE PETALUMA DEMONSTRATION MARSH PROJECT AND THE
PETALUMA RIVER UPPER REACHES ENHANCEMENT PROJECT**

WHEREAS, an interagency agreement was signed by various state and federal agencies
to resolve problems in the Bay-Delta system;

WHEREAS, Category III of the funding agreement provides for restoration of habitat to
implement the long-range plan for the Bay-Delta system;

WHEREAS, the voters of the State of California have enacted Proposition 204 which
provides state funds for grants under the agreement to local, state and federal agencies
and nonprofit entities for projects to enhance and restore habitats for targeted species;

WHEREAS, CALFED is the interagency association designated to establish procedures
and criteria for reviewing grant proposals and selecting grant recipients;

WHEREAS, said procedures and criteria established by CALFED require the applicant to
provide a resolution authorizing such applications;

WHEREAS, the applicant will enter into an agreement with CALFED or a designated
agency to carry out the restoration project(s);

WHEREAS, the City of Petaluma in conjunction with the Coastal Conservancy and other
responsible agencies has developed restoration plans for the Petaluma River and the
Petaluma Marsh which are significant resource areas in the Bay Delta system that are
within the City of Petaluma's jurisdiction;

1

2 WHEREAS, the Petaluma Marsh Enhancement Plan and the Petaluma River Access and
3 Enhancement Plan demonstrate a significant benefit to endangered fish and other
4 sensitive species could be achieved through implementation of the measures and
5 improvements recommended in the area plans;

6

7 WHEREAS, additional funding is needed to implement the recommended measures;


8

9 NOW THEREFORE BE IT RESOLVED that the City Council of the City of Petaluma
10 hereby approves the filing of grant applications for CALFED funding and appoints the
11 City Manager, his successors or assigns to conduct all negotiations, execute and submit
12 all documents, including, but not limited to applications, agreements, amendments,
13 payment requests and so on, which may be necessary for the completion of the Petaluma
14 Demonstration Marsh and the Petaluma River Greenway.

15

16 c:\grant\reso

Under the power and authority conferred upon this Council by the Charter of said City.

REFERENCE: I hereby certify the foregoing Resolution was introduced and adopted by the
Council of the City of Petaluma at a (Regular) (~~Emergency~~) (~~Special~~) meeting
on the 16th day of June, 19 97, by the
following vote: Approved as to
form

City Attorney

AYES: Read, Keller, Stompe, Torliatt, Maguire, Vice Mayor Hamilton, Mayor Hilligoss

NOES: None

ABSENT: None

ATTEST: 
City Clerk 
Mayor

CA 10-85

Council File 2
Res. No. 97-152 N.C.S.

Page 2 of 2

LYNN WOOLSEY
8TH DISTRICT, CALIFORNIA

COMMITTEES:
BUDGET
ECONOMIC AND EDUCATIONAL
OPPORTUNITIES

WASHINGTON OFFICE:
438 CANNON BUILDING
WASHINGTON, DC 20515-0506
TELEPHONE: (202) 225-5161

Congress of the United States
House of Representatives
Washington, DC 20515-0506

DISTRICT OFFICES:
1101 COLLEGE AVE., SUITE 200
SANTA ROSA, CA 95404
TELEPHONE: (707) 542-7182
FROM PETALUMA CALL:
(707) 795-1482
NORTHGATE BUILDING
1050 NORTHGATE DRIVE, SUITE 140
SAN RAFAEL, CA 94903
TELEPHONE: (415) 507-9554
INTERNET ADDRESS:
woolsey@hr.house.gov

July 23, 1997

RECEIVED

JUL 24 1997

PLANNING DEPARTMENT

CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, CA 95814

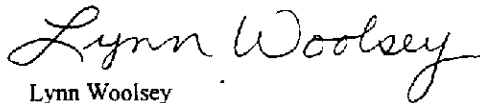
To Whom it May Concern:

I am writing to express my support for the City of Petaluma's proposal for funding from the CALFED Bay-Delta Program. Petaluma has already made outstanding achievements in their efforts at environmental restoration in the community.

As I understand it, funding from CALFED would allow the city to expand restoration projects for the Petaluma Marsh, Adobe Creek and upper reaches of the Petaluma River. Together, these projects would create a model watershed project for research and education. This model will be tied together by a watershed science and habitat management program focusing on Adobe Creek.

Thank you for your careful consideration of the City of Petaluma's application for funding. It is my sincere hope that Petaluma will receive the funding it needs to continue and expand its environmental preservation efforts for the community.

Sincerely,



Lynn Woolsey
Member of Congress

LW:tf

PRINTED ON RECYCLED PAPER

I - 0 0 3 4 7 5

I-003475



Mr. David Hansen
General Manager
Sonoma County Agricultural Preservation
and Open Space District
415 Russell Avenue
Santa Rosa, CA 95403

Re: City of Petaluma Open Space Grant Proposals for
Acquisition of the Petaluma River Greenway and
Marsh Restoration Site

Dear Mr. Hansen:

I am writing to express enthusiastic support for the City of Petaluma's applications for grant funding to acquire greenway lands along the upper Petaluma River and to restore wetlands adjacent to the City's oxidation ponds.

The Conservancy is gratified to have been able to assist the City in preparing natural resource enhancement and public access plans for both the relatively urbanized upstream area and the more rural downstream wetlands. The City has been very successful in working with landowners, citizens and agencies in crafting detailed, feasible plans for protecting and improving river resources and in carrying out plan recommendations.

Implementation of the projects for which the City is requesting Agricultural Preservation and Open Space District funding would enable creation of a buffer for fish and wildlife habitat in the upstream area and restoration of wetlands and a migration corridor for the endangered saltmarsh harvest marsh near the oxidation ponds. Both of these undertakings are essential components of the plans for which the Conservancy provided funding.

We hope that the District will contribute to Petaluma River protection and restoration by providing the funding assistance requested by the City.

Sincerely,

Michael L. Fischer
Executive Officer

1330 Broadway, 11th Floor
Oakland, California 94612-2530
510-286-1015 Fax: 510-286-0470

C a l i f o r n i a S t a t e C o a s t a l C o n s e r v a n c y

SAN FRANCISCO BAY JOINT VENTURE

mailing address: Coastal Conservancy, 1330 Broadway, Suite 1100, Oakland, CA 94612

phone: 510-286-6767 fax: 510-286-0470

July 17, 1997

RECEIVED

JUL 21 1997

PLANNING DEPARTMENT

Kate Hansel
CALFED Bay-Delta Program
1416 Ninth St., Suite 1155
Sacramento, CA 95814

RE: City of Petaluma Category III Proposals for the Petaluma Marsh Restoration, Petaluma River Greenway and Adobe Creek Restoration Project

Dear Kate:


I am writing on behalf of the Management Board of the San Francisco Bay Joint Venture in support of the City of Petaluma's grant applications to acquire lands to create a greenway along the Petaluma River, to restore 150 acres of wetland habitat in the Petaluma Marsh and to restore the Adobe Creek Watershed.

As you know, the Joint Venture is a partnership of public agencies, environmental organizations, business representatives and agricultural interests working cooperatively to protect, restore and enhance all types of wetlands around the San Francisco Bay region. We have begun assisting with the completion of existing wetlands protection projects and developing new projects and have been working with the city of Petaluma on their projects.

The City of Petaluma has done an excellent job of implementing the Coastal Conservancy funded Petaluma Marsh Enhancement Plan and Petaluma River Access and Enhancement Plan. The Joint Venture strongly supports their work. The creation of a greenway along the upper reaches of the Petaluma River will create a buffer from urbanization and provide for habitat restoration as described by the River Plan. The proposed marsh restoration project near the City's oxidation ponds will create approximately 50 acres of salt marsh along the river as envisioned in the Marsh Plan. The City's work on Adobe Creek on behalf of fish and wildlife has helped bring back steelhead and salmon.

We support these proposals and encourage CALFED to consider them favorably. Thank you for your consideration.

Sincerely,


Nancy Schaefer
Coordinator

✓ cc: Jennifer Barrett, City of Petaluma



*Trout Unlimited
of California*

July 22, 1997

Mr. Lester Snow
Executive Director
CALFED Bay-Delta Program
1416 Ninth Street, Suite 1155
Sacramento, Ca. 95814

Re: City of Petaluma-Restoration Project:

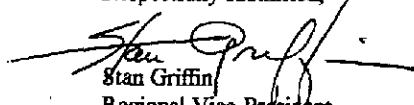
Dear Mr. Snow:

Trout Unlimited is America's leading coldwater fisheries conservation organization dedicated to the protection and restoration of our trout and salmon resources and the watersheds that sustains those resources. We have over 1100 members in Marin and Sonoma Counties who voluntarily contribute their personal resources to aquatic habitat protection and restoration efforts.

I have reviewed the Petaluma Watershed Model restoration and Management Program with some of our local members and they are very supportive of the program. Not only will it benefit the riparian and aquatic habitat in the watershed, the program will greatly improve the water quality in the river and the San Pablo Bay and the Wildlife Refuge. As the San Pablo Bay is used by the outgoing migrating juvenile salmon and steelhead as a nursery area prior to their journey to the ocean the improved water quality will greatly enhance their survival.

As previously indicated, Trout Unlimited supports the above entailed program and looking forward to an improved Petaluma River watershed and improved water quality in San Pablo and San Francisco Bay.

Respectfully submitted,


Stan Griffin
Regional Vice-President
Southwest Region

5200 Huntington Ave. #300, Richmond, CA 94804-5416 • Phone 510-528-5390 • Fax 510-525-3664

Protecting and Improving Your Fishing Future

SIERRA
CLUB



SONOMA COUNTY GROUP

P.O. Box 466, Santa Rosa, CA 95402

(707) 544-7651

CALFED Bay-Delta Program
1416 Ninth St. #1155
Sacramento, Ca. 958145

RECEIVED

JUL 16 1997

PLANNING DEPARTMENT

To Whom It May Concern:

The Sonoma Group of the Sierra Club supports the restoration efforts of the City of Petaluma in the projects: Petaluma Marsh, Petaluma River Greenway, and Adobe Creek. These restoration efforts are important to bringing wildlife back into habitats that had been degraded. Thanks for your consideration of these important efforts.

Sincerely,



David Bannister

Chair, Sonoma Group

To explore, enjoy and protect the earth

I - 0 0 3 4 7 9

I-003479